

Service Manual

Cassette Deck

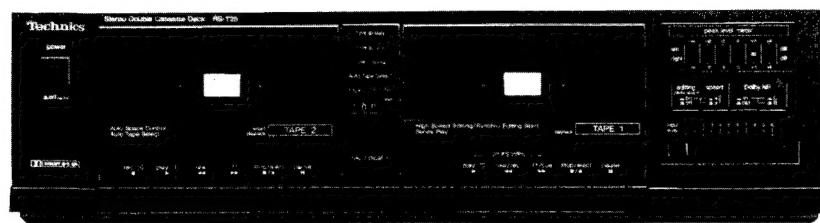
Dolby B · C NR-Equipped
Double Cassette Deck



RS-T25

Color

(K)...Black Type



Color	Areas
(K)	[PA]Far East PX.
(K)	[PE]European Military.

RS-B17W MECHANISM SERIES

SPECIFICATIONS

■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
(TAPE 1) PLAY	Solid Permaloy head
(TAPE 2) REC/PLAY	Solid Permaloy head
Erasing	Double-gap ferrite head
Motors	Electronically controlled DC motor
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Tape speed	4.8 cm/sec. (1-7/8 ips)
Frequency response (w/o Dolby N.R.)	
METAL	20 Hz~16 kHz
	40 Hz~15 kHz (± 3 dB)
CrO ₂	20 Hz~15 kHz
	40 Hz~14 kHz (± 3 dB)
NORMAL	20 Hz~15 kHz
	40 Hz~14 kHz (± 3 dB)
S/N	(signal level = max recording level, CrO ₂ type tape)
Dolby C NR in	74 dB (CCIR)
Dolby B NR in	66 dB (CCIR)
NR out	56 dB (A weighted)

Wow and flutter 0.08% (WRMS)**Fast Forward and Rewind Time**

Approx. 105 seconds with C-60 cassette tape

Input sensitivity and impedanceLINE 60 mV/47 k Ω **Output voltage and impedance**LINE 400 mV/1.5 k Ω **■ GENERAL****Power consumption** 18W

Supply from amplifier

430 × 115 × 227 mm

(16-15/16" × 4-17/32" × 8-15/16")

Weight 3.4 kg**Note:**

Specifications are subject to change without notice.

Weight and dimensions are approximate.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Panasonic Tokyo Office
Matsushita Electric Trading Co., Ltd.
6th Floor, World Trade Center Bldg.,
No. 4-1, Hamamatsu-cho 2-Chome, Minato-ku,
Tokyo 105, Japan

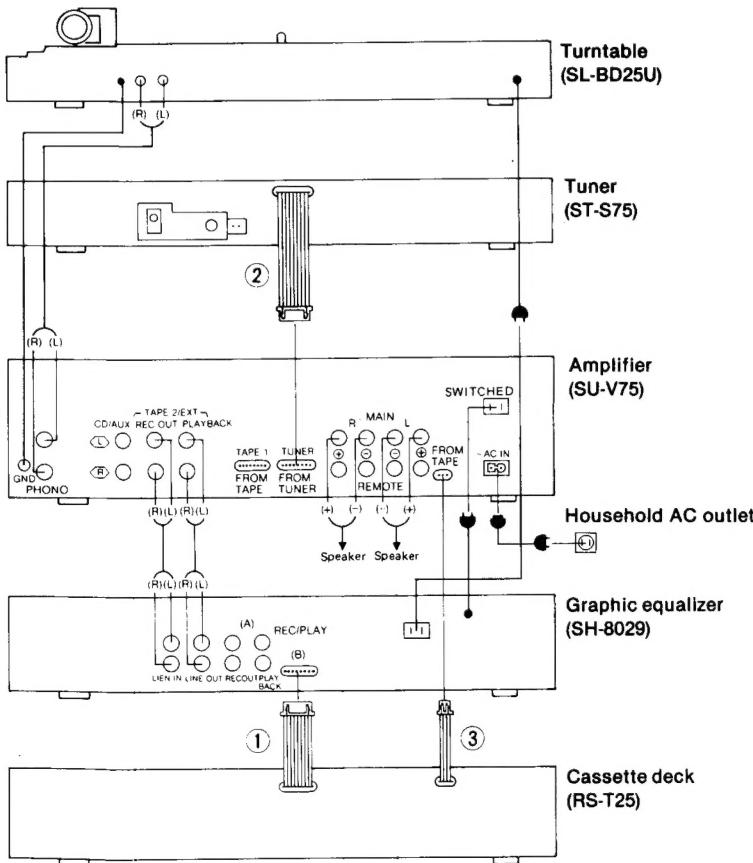
RS-T25

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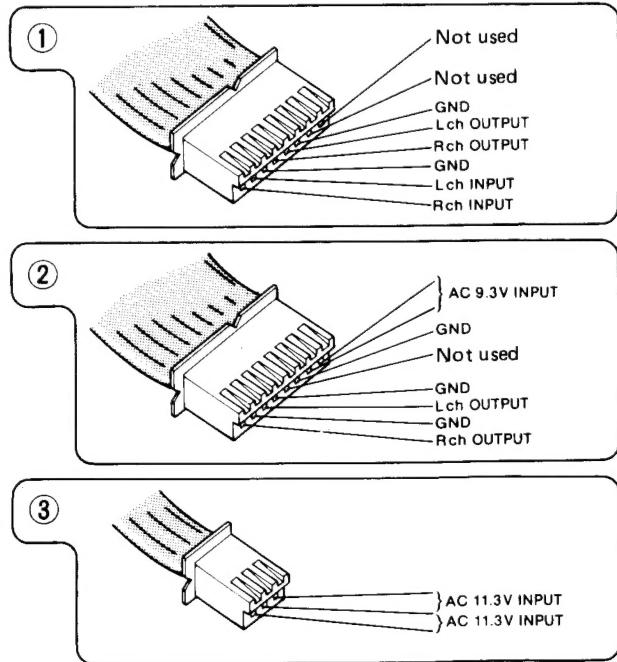
■ HOW TO CONNECT



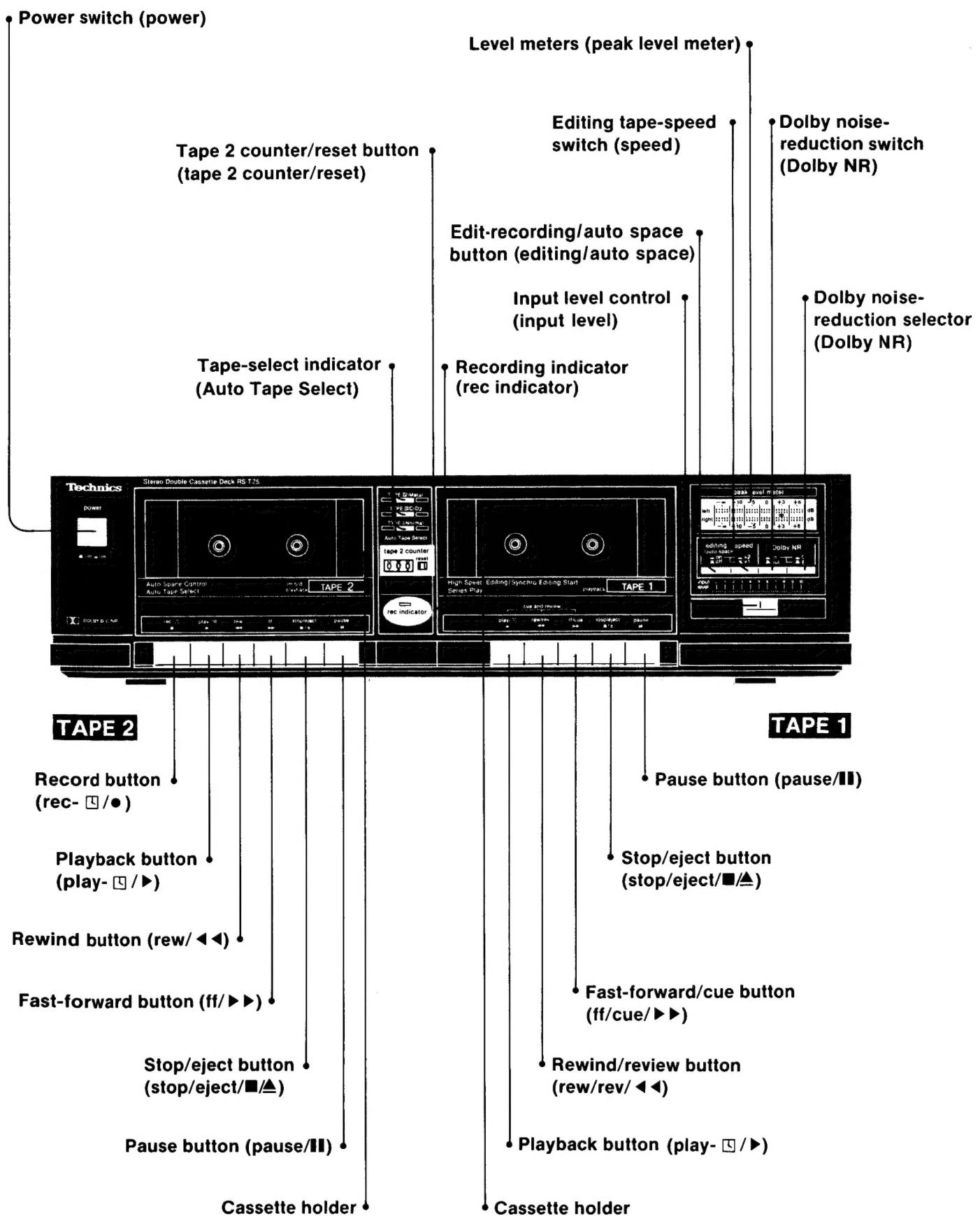
Connect the turntable, tuner, amplifier, graphic equalizer and cassette deck as shown.

If the connection is wrong, normal operation will not be attained.

* Tuner (ST-S75) and Cassette deck (RS-T25) are not equipped with power supply. The amplifier shown or power supply fixture (SZZA1065C) is necessary for the repair and check of Tuner or Cassette deck.

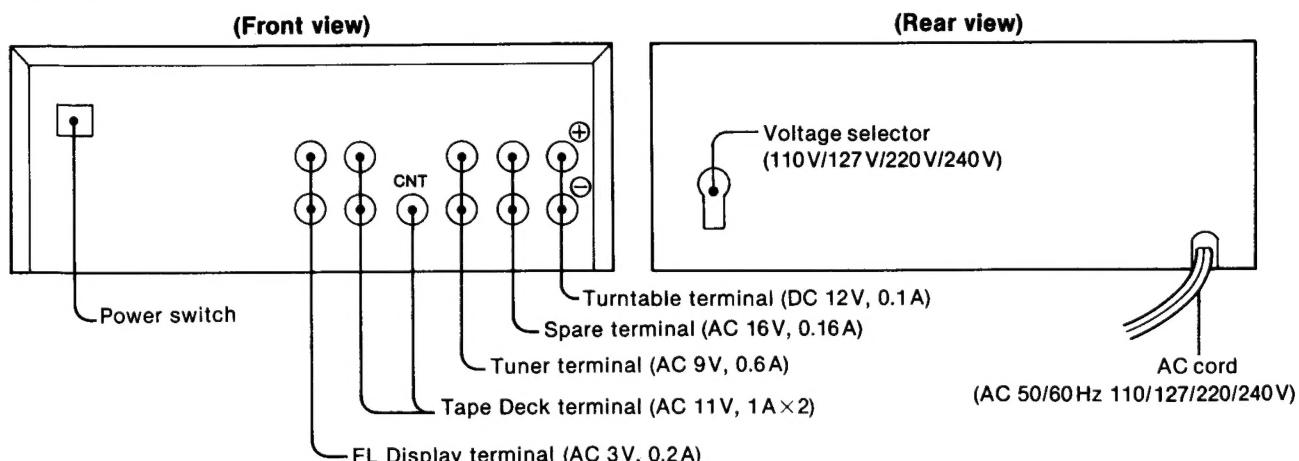


■ LOCATION OF CONTROLS

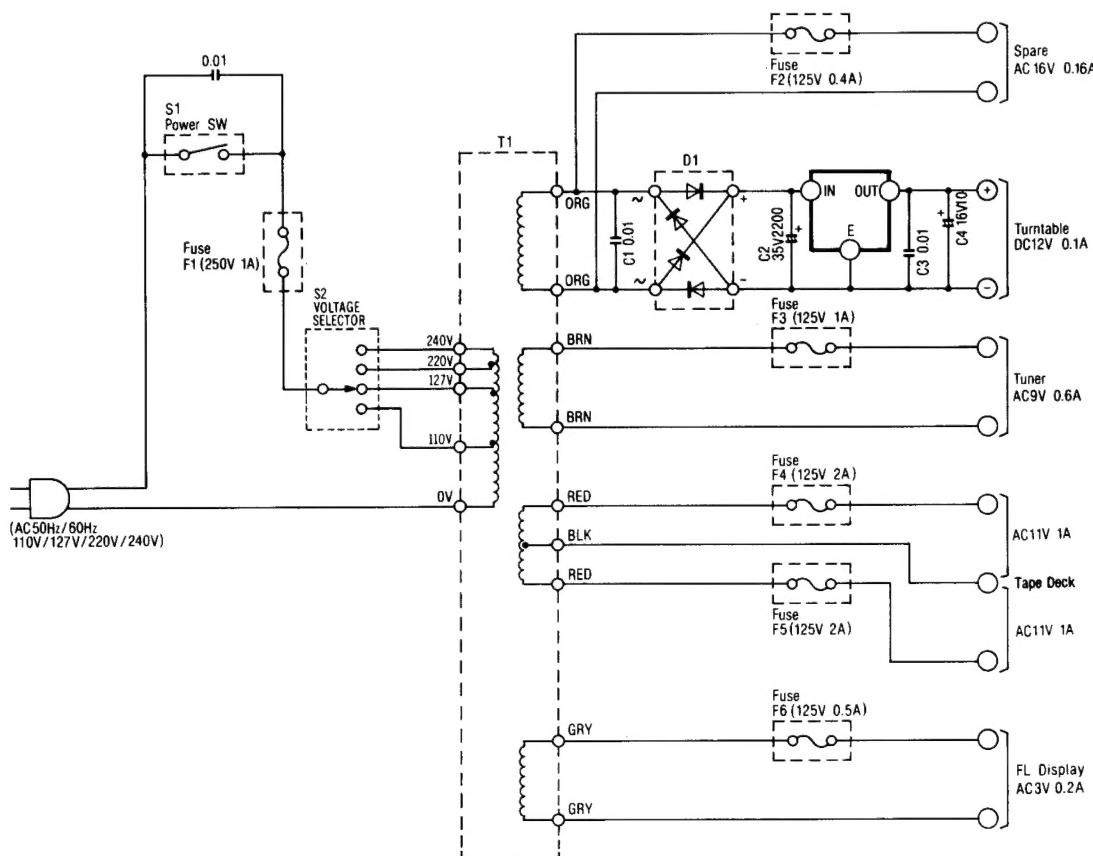


■ INFORMATION ON POWER SUPPLY FIXTURE (SZZA1065C)

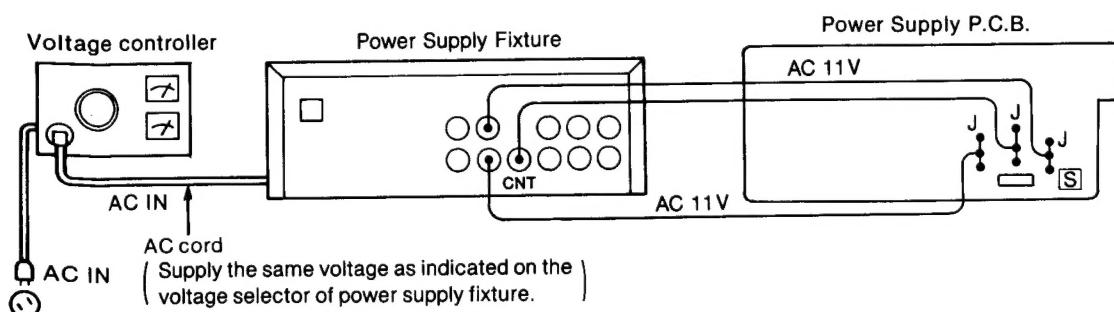
- LOCATION



- SCHEMATIC DIAGRAM (Reference)



- HOW TO CONNECT



■ OPERATION

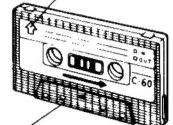
Recording

1 Turn the power of the amplifier and the graphic equalizer on, and set the input selector of the equalizer to the "source" position.

2 "on" ( → )

3 Press then insert the tape cassette.

The side to be recorded facing outward.



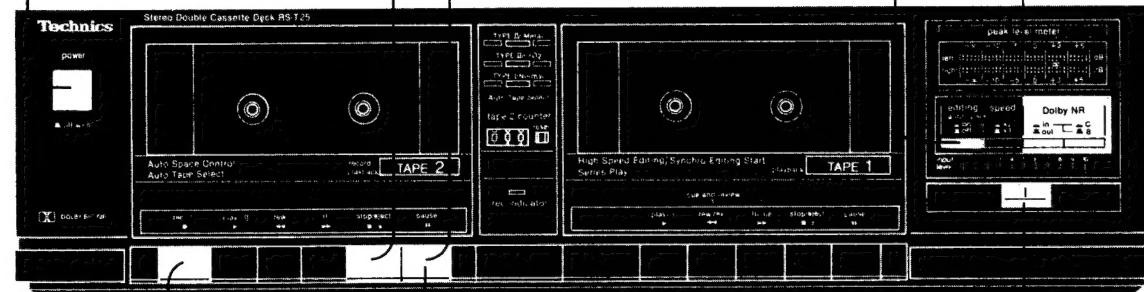
4 Press.

5 "off" ( → )

6 Select the noise-reduction system.

Note:

- Sounds from the deck cannot be heard while the editing/auto space button is pressed in, so set the tape-monitor switch (on the amplifier and equalizer, etc.) to the "source" position to be able to hear the sounds from the deck.



7 Press.
(Recording stand-by mode)

8 Begin the program source to be recorded.

10 Press.
(Recording will begin.)

To erase recorded sounds

- Set the Dolby noise-reduction switch to the "out" position.
- Set the input level control to the minimum (0) position.
- Prepare in the same way as for recording, and then let the tape run.

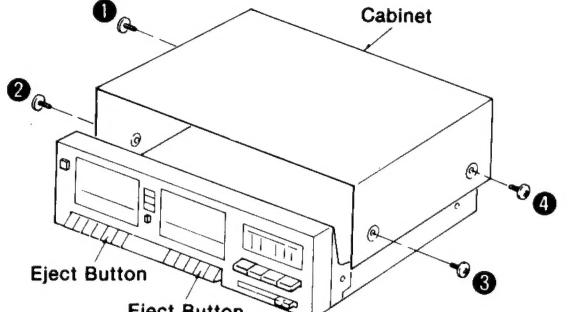
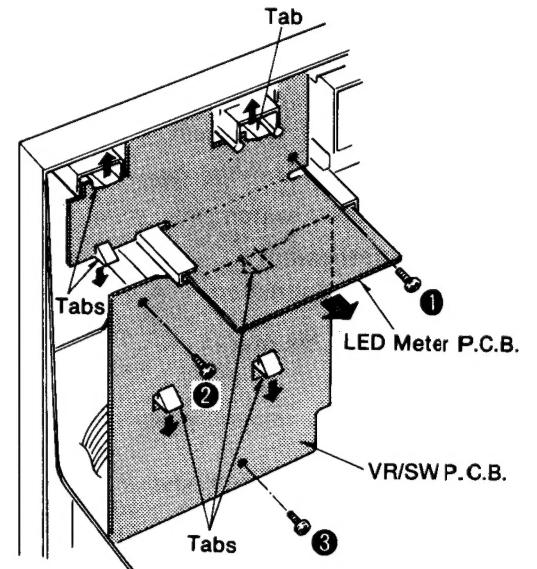
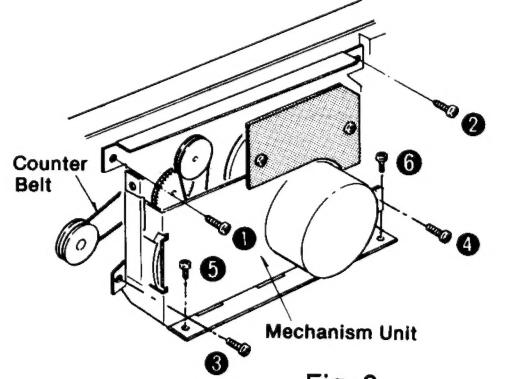
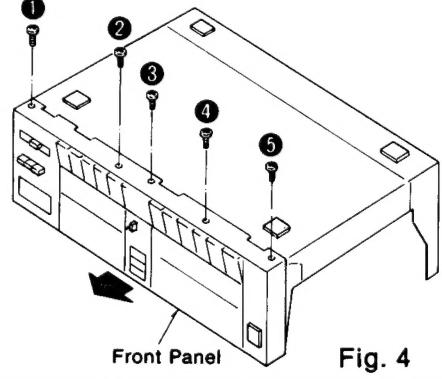
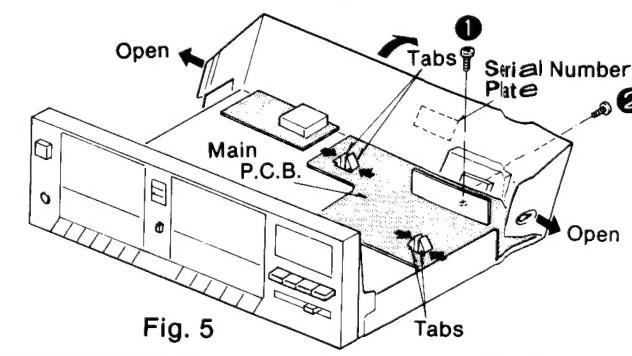
Note that any sounds on the tape will be automatically erased if a new recording is made on that part of the tape.

Adjustment of the recording level

The numbers which you should use as a guide for the adjustment of the tape level will differ depending upon the type of tape.

Normal Tape CrO ₂ Tape	Metal Tape
+3 dB 	+6 dB 

■ DISASSEMBLY INSTRUCTIONS

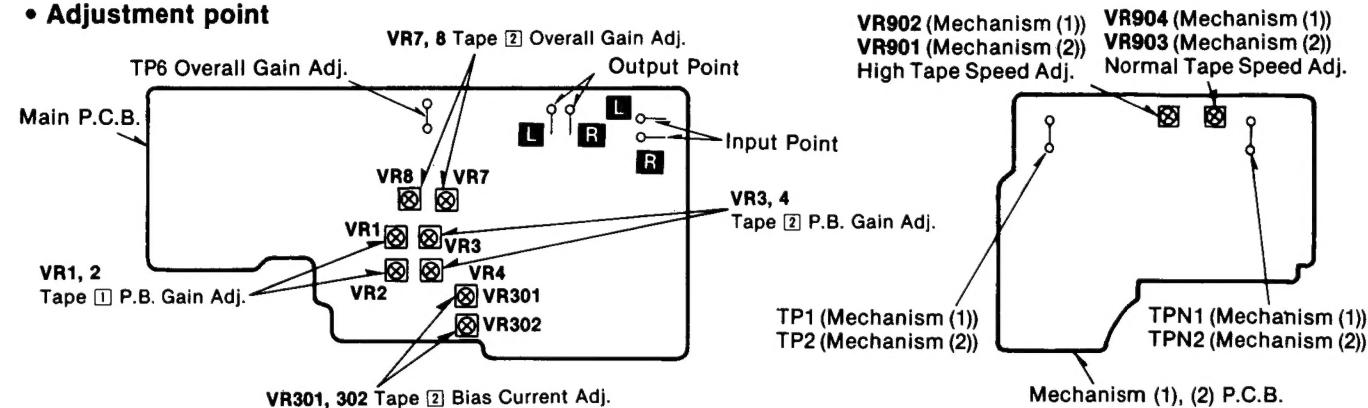
Ref. No. 1	How to remove the cabinet	Ref. No. 3	How to remove the LED meter P.C.B. and VR/SW P.C.B.
Procedure 1	<ul style="list-style-type: none"> Remove the 4 screws (①~④). 	Procedure 1→3	<ol style="list-style-type: none"> Remove the one screw (①). Push the 3 tabs aside, and then remove the LED P.C.B. Remove the 2 screws (②, ③). Push the 3 tabs aside, and then remove the VR/SW P.C.B.
			
	Fig. 1		Fig. 3
Ref. No. 2	How to remove the mechanism unit		
Procedure 1→2	<ol style="list-style-type: none"> Push the eject button (see fig. 1). Remove the 6 screws (①~⑥). Remove the counter belt (for mechanism unit of tape ②). 		
			
	Fig. 2		
Ref. No. 4	How to remove the front panel	Ref. No. 5	How to remove the main P.C.B.
Procedure 1→2→3→4	<ul style="list-style-type: none"> Remove the 5 screws (①~⑤). 	Procedure 1→5	<ol style="list-style-type: none"> Remove the 2 screws (①, ②). Open the sides of back chassis, and then pull down the back chassis. Push the 4 tabs aside.
			
	Fig. 4		Fig. 5

* Serial No. Indication

- The serial number plate of the product is attached to the back chassis (shown in fig. 5).

■ MEASUREMENT AND ADJUSTMENT METHODS

• Adjustment point



Measurement Condition

- Input level controls; Maximum
- Dolby NR switch; Out
- Editing switch; off
- Editing tape speed switch; $\times 1$

Measuring instrument

- EVM (Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

Test tape

- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM
- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment
 - Normal reference blank tape; QZZCRA
 - CrO₂ reference blank tape; QZZCRX
 - Metal reference blank tape; QZZCRZ

Head azimuth adjustment (TAPE 1, 2)

1. Test equipment connection is shown in Fig. 1.
2. Playback the azimuth adjusted part (8kHz, -20dB) of the test tape (QZZCFM) and regulate the angle adjusting screw so that the outputs of L-CH and R-CH are maximized. (When the adjusting positions are different with L-CH and R-CH, find a position where the outputs of L-CH and R-CH are balanced, and then make the adjustment.)
3. At the same time, obtain a lissajous waveform and eliminate phase deflection.
4. After adjustment, lock the tape guide height and angle adjustment screws.

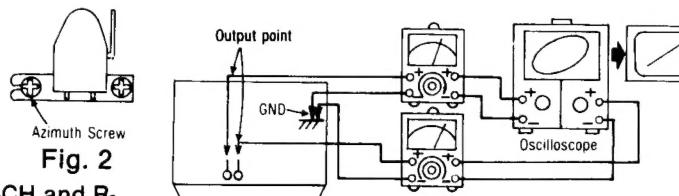


Fig. 1

Tape speed adjustment (TAPE 1, 2)

Normal speed

1. Test equipment connection is shown in Fig. 3.
2. Playback the middle part of the test tape (QZZCWAT).
3. Adjust TAPE 1: VR904 and TAPE 2: VR903 so that the output is within the standard.

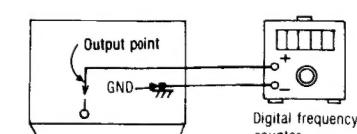


Fig. 3

Standard value: 3000 ± 20 Hz (Normal) 6000 ± 40 Hz (High)

Playback frequency response (TAPE 1, 2)

1. Test equipment connection is shown in Fig. 4.
2. Playback the playback frequency response part (315Hz, 12.5kHz~63Hz, -20dB) of the test tape (QZZCFM).
3. Check that the frequency is within the range shown in Fig. 5 for both L-CH and R-CH.

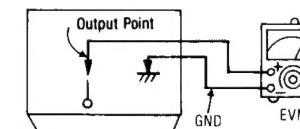


Fig. 4

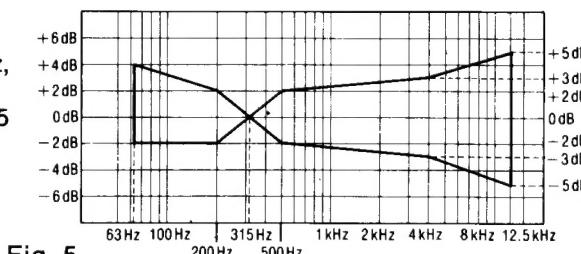


Fig. 5

Playback gain adjustment (TAPE 1, 2)

1. Test equipment connection is shown in Fig. 4.
2. Playback the playback gain adjusted part (315Hz, 0dB) of the test tape (QZZCFM).
3. Adjust TAPE 1: VR1 (L-CH) (VR2 (R-CH)) and TAPE 2: VR3 (L-CH) (VR4 (R-CH)) so that the output is within the standard.

Standard value: 0.4 ± 0.5 dB (0.02V)

Overall frequency response (TAPE 2)

1. Test equipment connection is shown in Fig. 6, and connect a jumper of TP6 (See page 7).
2. Set a normal blank tape (QZZCRA) and record by applying signal (50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz and 10kHz), 20dB attenuated from the reference input level signal (1kHz, -24dB).
3. Playback the signal recorded in step 2, and check that the level of each output frequency is within the range shown in Fig. 7 in comparison with the reference frequency (1kHz).
4. If it is not within the standard range, adjust the bias current by VR301 (L-CH) (VR302 (R-CH)) so that the frequency level is within the standard.
 - Level up in high frequency range.....Increase the bias current.
 - Level down in high frequency range.....Decrease the bias current.
5. After that increase the signal recorded on CrO₂ blank tape (QZZCRX) and metal blank tape (QZZCRZ) up to 12.5kHz and adjust in the same way as mentioned above and check that the frequency level is within the range shown in Fig. 8.
6. After adjustment, cut a jumper of TP6.

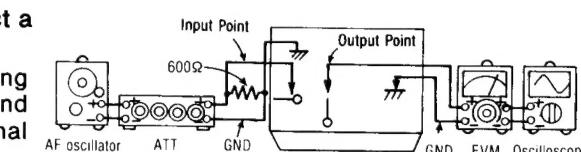


Fig. 6

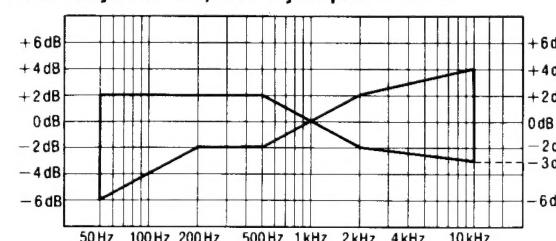


Fig. 7

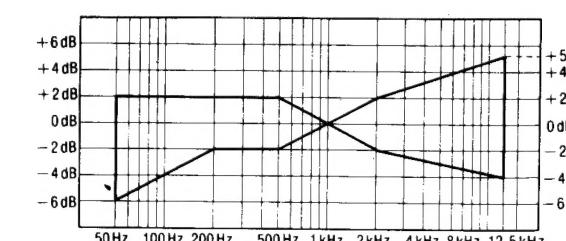


Fig. 8

Overall gain adjustment (TAPE 2)

1. Test equipment connection is shown in Fig. 6, and connect a jumper of TP6. (See page 7.)
2. Set a normal blank tape (QZZCRA) and apply the reference input level signal (1kHz, -24dB) in record pause mode.
3. Adjust the output 0.4V by attenuator and then record.
4. Playback the signal recorded in step 3, and check that the output is within the standard.
5. If it is not within the standard, adjust VR7 (L-CH) (VR8 (R-CH)) and repeat the step (2), (3) and (4) until the output is within the standard.
6. After adjustment, cut a jumper of TP6.

Standard value: $0.4V \pm 0.1V$
-0.08

Dolby NR circuit

1. Test equipment connection is shown in Fig. 9.
2. Set a normal tape and apply 1 kHz signal in record pause mode.
3. Adjust by attenuator so that the output between terminal 7 of IC401 (L-CH) (IC402 (R-CH)) and ground is 12.3mV.

— Dolby B (Encode characteristic) —

4. Set NR switch to "Dolby B" and change the input signal to 1 kHz, 5 kHz.
5. Check that the output between terminal 21 of IC401 (L-CH) (IC402 (R-CH)) and ground change as specified from the level in NR out mode.

Standard value: $6 \pm 2.5 \text{dB}$ (1kHz), $8 \pm 2.5 \text{dB}$ (5kHz)

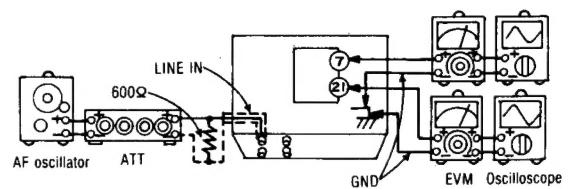


Fig. 9.

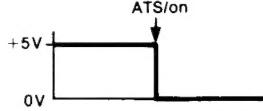
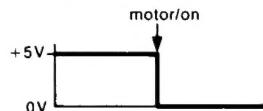
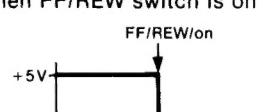
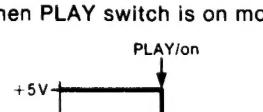
— Dolby C (Encode characteristic) —

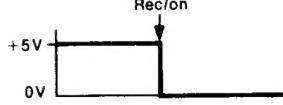
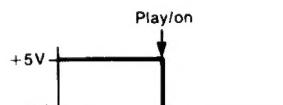
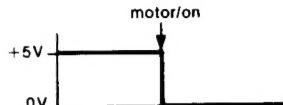
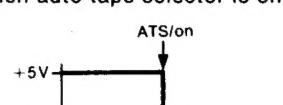
6. Set NR switch to "Dolby C" and change the input signal to 1 kHz, 5 kHz.
7. Check that the output between terminal 21 of IC401 (L-CH) (IC402 (R-CH)) and ground change as specified from the level in NR out mode.

Standard value: $11.5 \pm 2.5 \text{dB}$ (1kHz), $8.5 \pm 2.5 \text{dB}$ (5kHz)

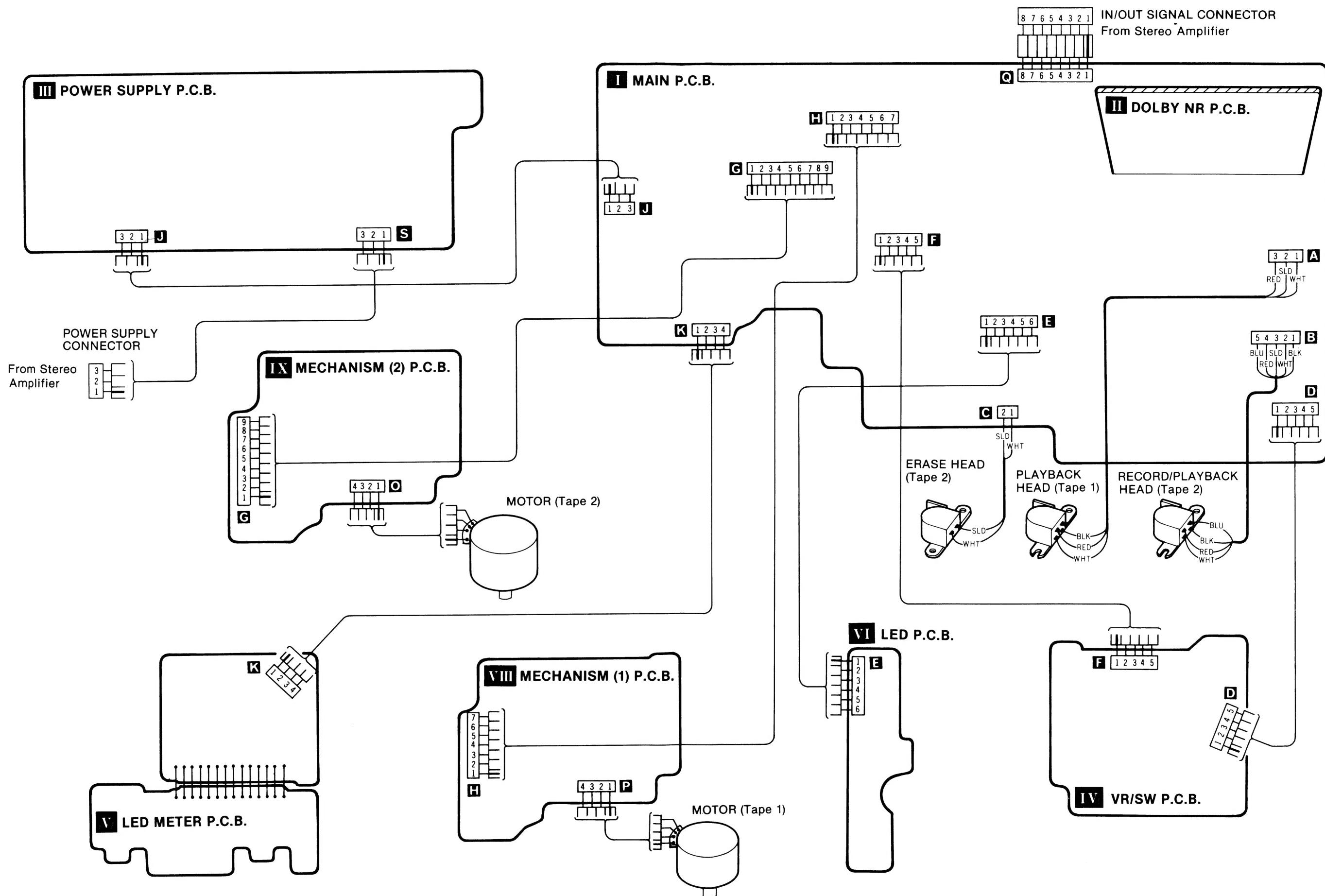
■ MICROCOMPUTER TERMINAL FUNCTION AND WAVEFORM

(IC801: MN1402STN)

Terminal No.	Symbol	Name	Function/operation
1.	Vss	—	• Connection to GND.
2.	CO9	P.B. mute	• "H" in mute on, "L" in mute off.
3.	CO8	Auto tape selector	• "H" in $70\mu\text{s}$ mode, "L" in $120\mu\text{s}$ mode.
4.	CO7	Bias	• "H" in bias off, "L" in bias on.
5.	CO6	Direct muting	• "H" in mute off, "L" in mute on.
6.	CO5	—	• Non connection.
7.	AI3	Reading of input switch state tape □ auto tape selector (S909)	• "L" when auto tape selector is on mode. 
8.	AI2	Reading of input switch state tape □ motor (S904)	• "L" when motor switch is on mode. 
9.	AI1	Reading of input switch state tape □ FF/REW (S906)	• "L" when FF/REW switch is on mode. 
10.	AIφ	Reading of input switch state tape □ PLAY (S902)	• "L" when PLAY switch is on mode. 

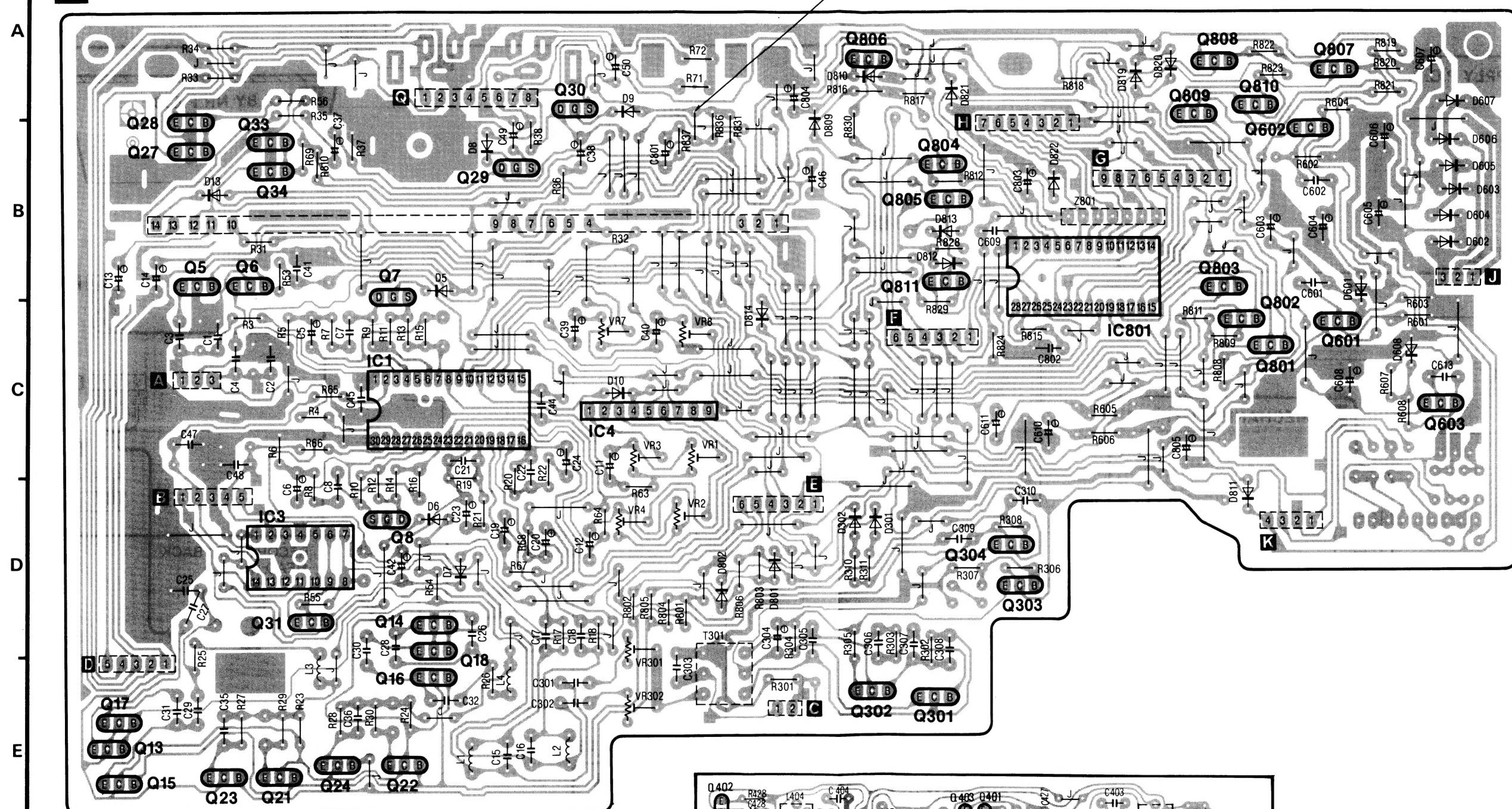
Terminal No.	Symbol	Name	Function/operation
11.	BI3	Reading of scan signal output	<ul style="list-style-type: none"> • Input of Tape ② REC switch, Tape ② PLAY switch. • The above-mentioned inputs are read in accordance with DOφ, DO1 scanning. DOφ output → "L".....Reading of REC switch.  <p>DO1 output → "L".....Reading of PLAY switch.</p> 
12.	BI2	Reading of input switch state editing (S802)	<ul style="list-style-type: none"> • "H" when editing switch is on mode. 
13.	BI1	Reading of input switch state tape ② motor (S903)	<ul style="list-style-type: none"> • "L" when motor switch is on mode. 
14.	BIφ	Reading of input switch state tape ② auto tape selector (S907)	<ul style="list-style-type: none"> • "L" when auto tape selector is on mode. 
15.	EOφ	Head selector	• "H" in tape ① Head, "L" in tape ② Head.
16.	EO1	Tape speed selector	• "H" in high speed, "L" in normal speed.
17.	EO2	Dolby NR IN/OUT	• "H" in REC mode, "L" in PLAY mode.
18.	EO3	Dolby B/C NR selector	• "H" in PLAY mode, "L" in REC mode.
19.	RST	Reset terminal	<ul style="list-style-type: none"> • Used to reset the microcomputer when power is thrown in. • Reset at "L".
20.	TEST	—	• Connection to GND.
21.	DO3	Motor ②	• "H" in motor ② off, "L" in motor ② on.
22.	DO2	Motor ①	• "H" in motor ① off, "L" in motor ① on.
23.	DO1	SCAN 2	• Scan signal for reading of tape ② PLAY switch input.
24.	DOφ	SCAN 1	• Scan signal for reading of REC switch input.
25.	SNSφ	Remote control signal input	• Input of serial signal from remote control jack.
26.	SNS1	Reading of input switch state tape speed (S802)	• "H" when tape speed switch is ×2 mode.

■ WIRING CONNECTION DIAGRAM

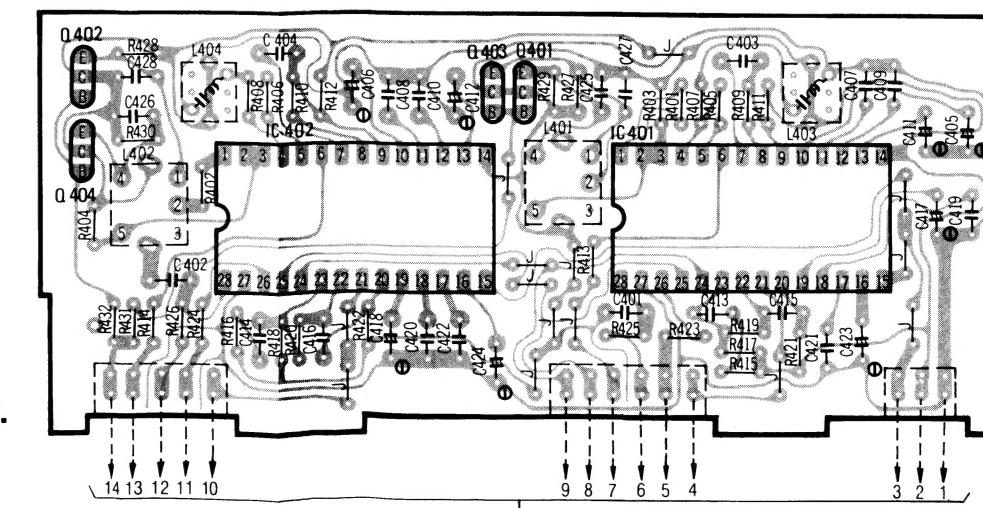


■ PRINTED CIRCUIT BOARDS

I MAIN P.C.B.

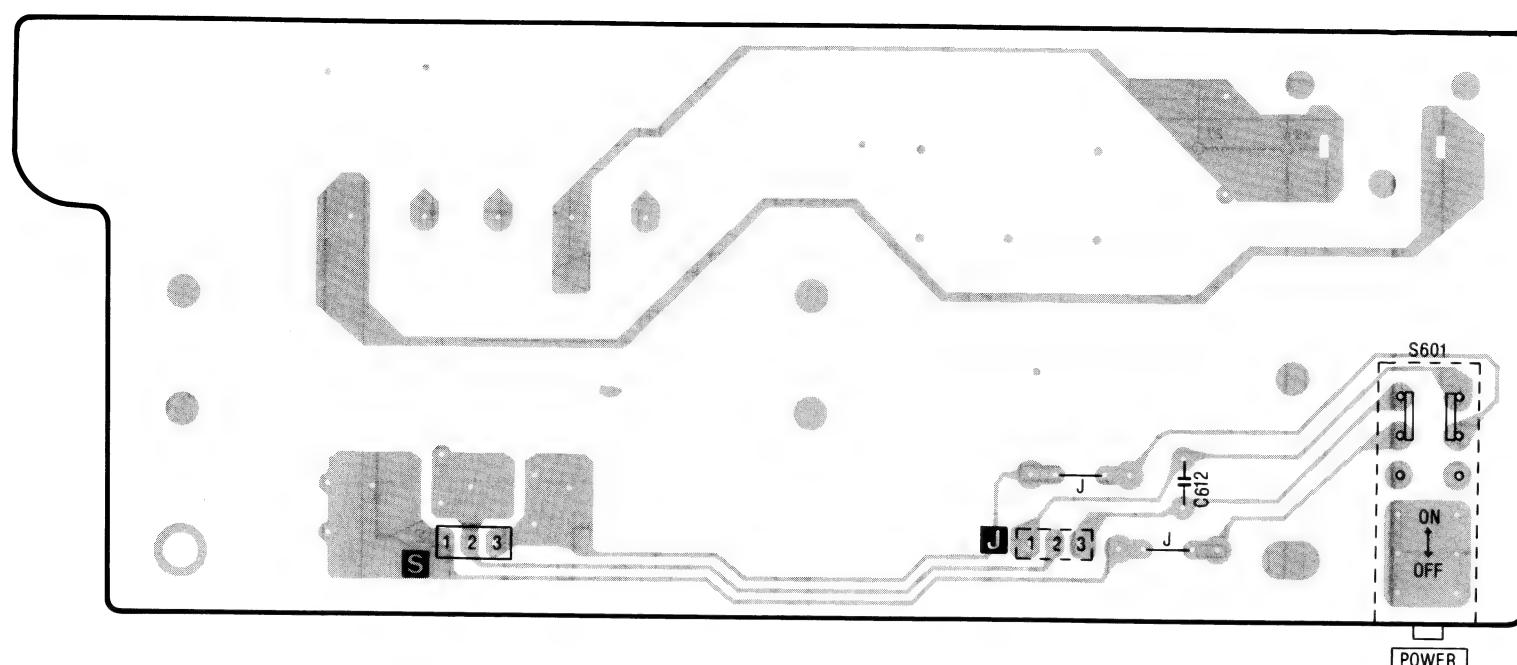


DOLBY NR P.C.B

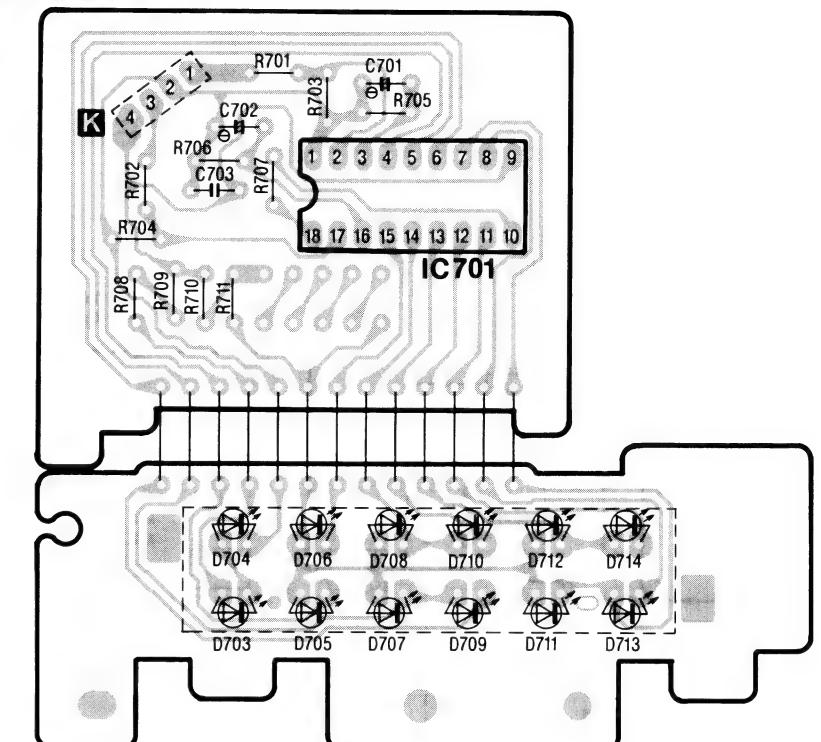


1 2 3 4 5 6 7 8 9

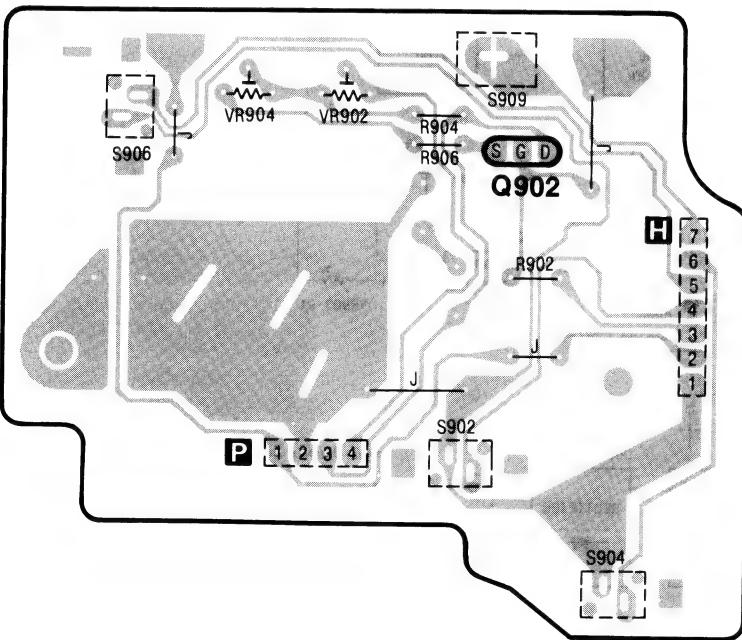
III POWER SUPPLY P.C.B.



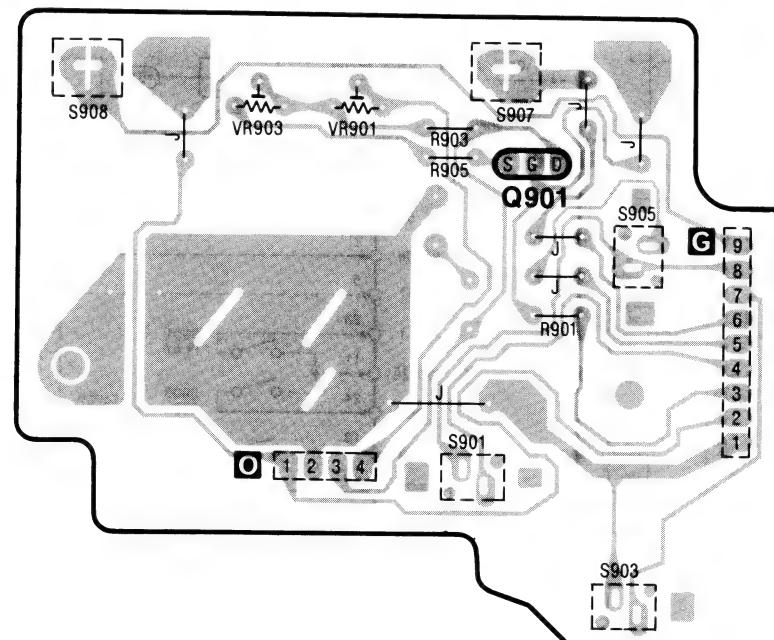
V LED METER P.C.B.



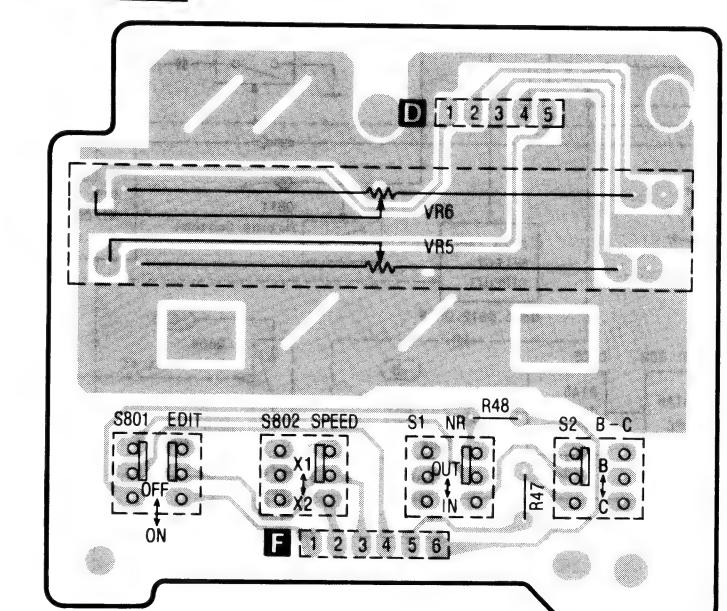
VIII MECHANISM (1) P.C.B.



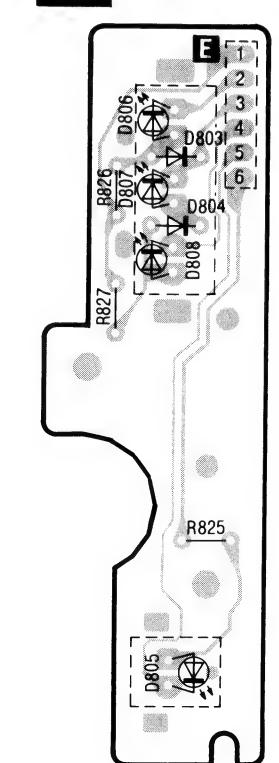
IX MECHANISM (2) P.C.B.



IV VR/SW P.C.B.



VI LED P.C.B.



RESISTOR

Notes: • Part number
Please use

Numbering System

Resistor Type

ERD : Carbon
ERG : Metal Oxide
ERC : Solid

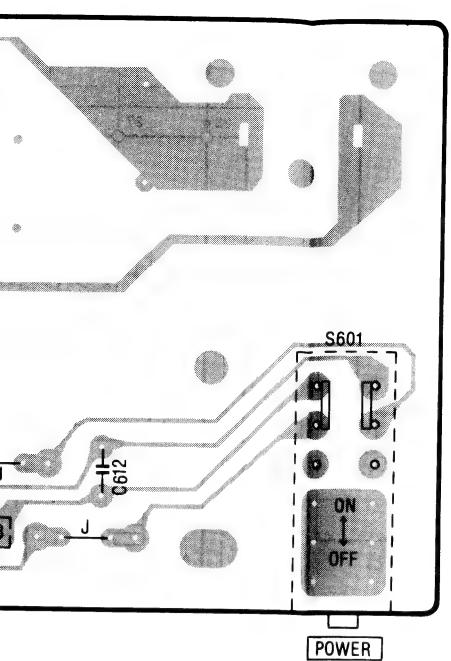
RESISTORS

Ref. No.	P
R3, 4	ERDS
R5, 6	ERDS
R7, 8	ERDS
R9, 10	ERDS
R11, 12	ERDS
R13, 14	ERDS
R15, 16	ERDS
R17, 18	ERDS
R19, 20	ERDS
R21, 22	ERDS
R23, 24	ERDS
R25, 26	ERDS
R27, 28	ERDS
R29, 30	ERDS
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R33, 34	ERDS
R35, 36	ERDS
R37, 38	ERDS
R43, 44	ERDS
R45, 46	ERDS
R47, 48	ERDS
R53, 54	ERDS
R55, 56	ERDS

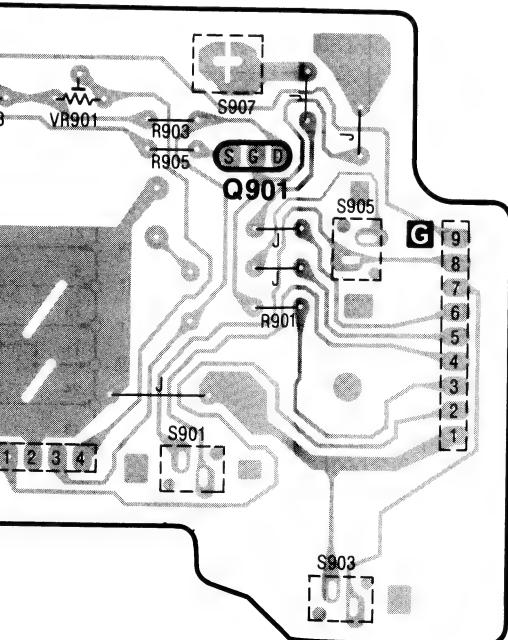
CAPACITOR

Ref. No.	P
C1, 2	ECKD
C3, 4	ECKD
C5, 6	ECEA
C7, 8	ECQB
C11, 12	ECEA
C13, 14	ECEA
C15, 16	ECKD
C17, 18	RCBS1
C19, 20	ECEA
C21, 22	RCBS1
C23, 24	ECEA
C25, 26	ECQB
C27, 28	ECQB
C29	ECFTD
C30, 31	ECFTD
C32	ECQB
C35, 36	ECFTD

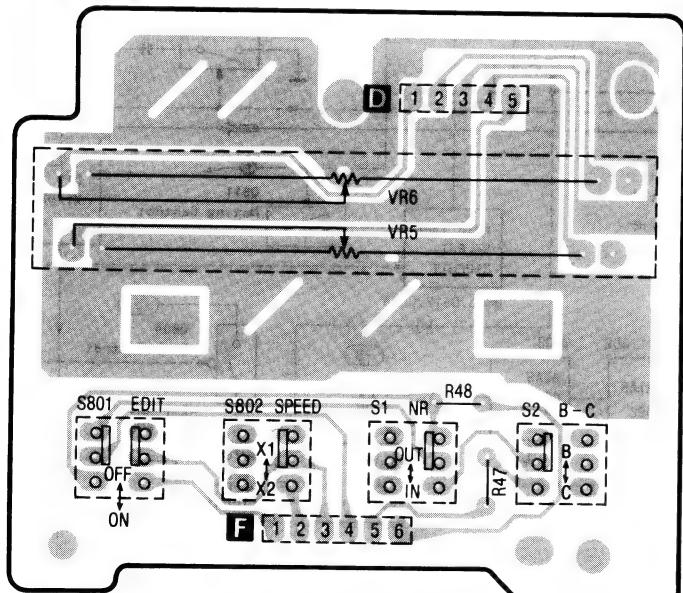
V LED METER P.C.B.



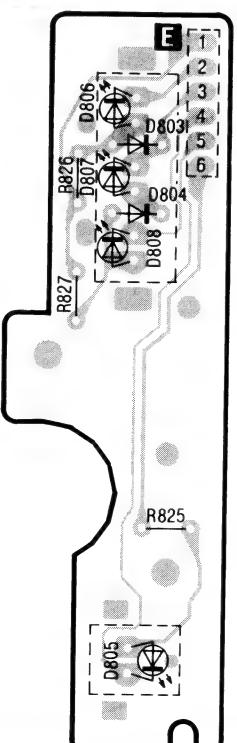
M (2) P.C.B.



IV VR/SW P.C.B.



VI LED P.C.B.



RESISTORS AND CAPACITORS

Notes: • Part numbers are indicated on most mechanical parts.
Please use this part number for parts order.

- The unit of resistance is OHM (Ω).
 $K=1000\Omega$, $M=1000k\Omega$
- The unit of capacitance is MICROFARAD (μF).
 $P=10^6\mu F$.

Numbering System of Resistor

Resistor Type	Wattage	Tolerance
ERD : Carbon	10 : 1/8W	J : $\pm 5\%$
ERG : Metal Oxide	25 : 1/4W	G : $\pm 2\%$
ERC : Solid	2F : 1/4W	K : $\pm 10\%$
	S2 : 1/4W	
	S1 : 1/2W	
	12 : 1/2W	

Numbering System of Capacitor

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA...N : Non-polar Electrolytic	2R3 : 2.3V	05 : 50V DC	C : $\pm 0.25\mu F$
ECEA : Electrolytic	DC	1H : 50V DC	J : $\pm 5\%$
ECCD : Ceramic	OJ : 6.3V	1 : 125V DC	K : $\pm 10\%$
ECKD : Ceramic	1C : 16V	2H : 500V DC	Z : $+80\%, -20\%$
ECQM : Polyester	1E : 25V	KC : 400V AC	M : $\pm 20\%$
ECQV : Polyester	1V : 35V		
ECQP : Polyester	1H : 50V		
ECKF : Ceramic	50 : 50V		
	25 : 25V		
	2A : 100V		

RESISTORS

Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
R3, 4	ERDS2TJ101	100	R63, 64	ERDS2TJ103	10K	R421, 422	ERDS2TJ823	82K	R809	ERDS2TJ392	3.9K
R5, 6	ERDS2TJ820	82	R65, 66	ERDS2TJ101	100	R423, 424	ERDS2TJ331	330			
R7, 8	ERDS2TJ392	3.9K	R67, 68	ERDS2TJ562	5.6K	R425, 426	ERDS2TJ101	100	R810	ERDS2TJ683	68K
R9, 10	ERDS2TJ272	2.7K	R69	ERDS2TJ103	10K	R427, 428	ERDS2TJ684	680K	R811	ERDS2TJ222	2.2K
R11, 12	ERDS2TJ122	1.2K	R71, 72	ERDS2TJ104	100K				R812	ERDS2TJ562	5.6K
R13, 14	ERDS2TJ332	3.3K	R301	ERDS2TJ1R0	1	R429, 430	ERDS2TJ684	680K	R815	ERDS2TJ183	18K
R15, 16	ERDS2TJ274	270K	R302, 303	ERDS2TJ683	68K	R431, 432	ERDS2TJ562	5.6K	R816	ERDS2TJ103	10K
R17, 18	ERDS2TJ103	10K				R601, 602	ERDS2TJ100	10	R817	ERDS2TJ123	12K
R19, 20	ERDS2TJ153	15K	R304, 305	ERDS2TJ100	10	R603, 604	ERDS2TJ102	1K	R818, 819	ERDS2TJ102	1K
R21, 22	ERDS2TJ472	4.7K	R306	ERDS2TJ561	560	R605, 606	ERDS2TJ470	47	R820	ERDS2TJ473	47K
R23, 24	ERDS2TJ102	1K	R308	ERDS2TJ183	18K	R607	ERDS2TJ102	1K	R821	ERDS2TJ152	1.5K
R25, 26	ERDS2TJ330	33	R310	ERDS2TJ331	330	R608	ERDS2TJ560	56	R822	ERDS2TJ473	47K
R27, 28	ERDS2TJ182	1.8K	R311	ERDS2TJ220	22	R701, 702	ERDS2TJ363	36K			
R29, 30	ERDS2TJ472	4.7K	R401, 402	ERDS2TJ242	2.4K	R703, 704	ERDS2TJ472	4.7K	R823	ERDS2TJ52	1.5K
R31, 32	ERDS2TJ103	10K	R403, 404	ERDS2TJ562	5.6K	R705, 706	ERDS2TJ154	150K	R824	ERDS2TJ223	22K
R33, 34	ERDS2TJ273	27K	R405, 406	ERDS2TJ332	3.3K	R707	ERDS2TJ562	5.6K	R825	ERDS2TJ102	1K
R35, 36	ERDS2TJ152	1.5K	R407, 408	ERDS2TJ102	1K	R708, 709	ERDS2TJ221	220	R826, 827	ERDS2TJ391	390
R37, 38	ERDS2TJ682	6.8K				R710, 711	ERDS2TJ330	33	R828, 829	ERDS2TJ103	10K
R43, 44	ERDS2TJ182	1.8K	R409, 410	ERDS2TJ333	33K	R801	ERDS2TJ103	10K	R830, 831	ERDS2TJ102	1K
R45, 46	ERDS2TJ330	33	R411, 412	ERDS2TJ823	82K	R802	ERDS2TJ332	3.3K	R836	ERDS2TJ103	10K
R47, 48	ERDS2TJ223	22K	R413, 414	ERDS2TJ471	470	R803	ERDS2TJ272	2.7K	R901, 902	ERDS2TJ104	100K
R53, 54	ERDS2TJ103	10K	R415, 416	ERDS2TJ512	5.1K	R804	ERDS2TJ563	56K	R903, 904	ERDS2TJ223	22K
R55, 56	ERDS2TJ223	22K	R417, 418	ERDS2TJ683	68K	R805, 806	ERDS2TJ103	10K	R905, 906	ERDS2TJ332	3.3K
			R419, 420	ERDS2TJ222	2.2K	R808	ERDS2TJ332	3.3K			

CAPACITORS

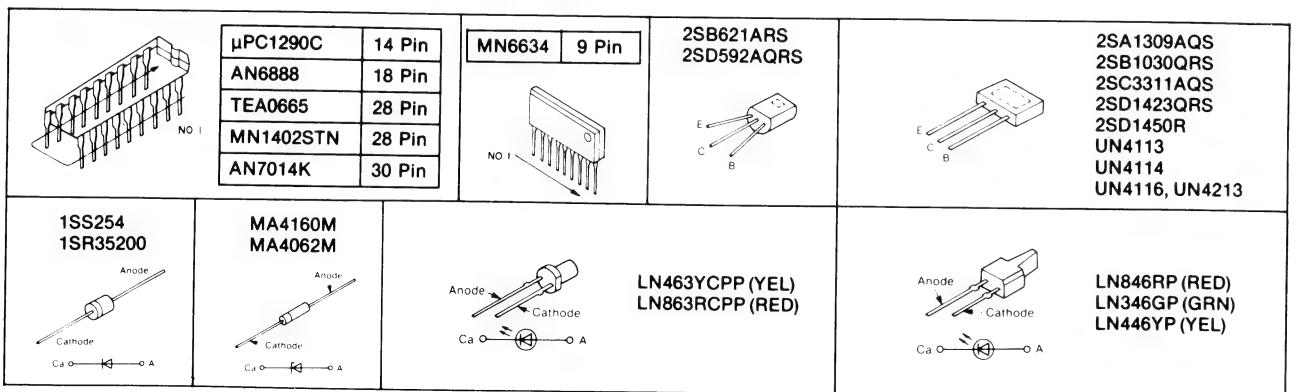
Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
C1, 2	ECKD1H271KB	270P	C37, 38	ECEA1CU100	10	C310	ECKD1H473ZF	0.047	C604	ECEA1AU471	470
C3, 4	ECKD1H391KB	390P	C39, 40	ECEA1HU2R2	2.2	C401, 402	ECCD1H820K	82P	C605	ECEA1CU102	1000
C5, 6	ECEA0JU101	100	C41	ECKD1H473ZF	0.047	C403, 404	ECKD1H472Z	0.047	C606	ECEA1CU471	470
C7, 8	ECQB1H123JZ	0.012				C405, 406	ECEA1CU100	10	C607	ECEA1CU102	1000
C11, 12	ECEA1EU4R7	4.7	C42	ECEA1HU2R2	2.2	C407, 408	ECQV1H473JZ	0.047	C608	ECEA0JU222	2200
C13, 14	ECEA1HU010	1	C44, 45	ECKD1H223Z	0.022	C409, 410	ECQV1H224JZ	0.22	C609	ECKD1H223ZF	0.022
C15, 16	ECKD2H101KB	100P	C46	ECEA1CU100	10	C411, 412	ECEA50MR68R	0.68	C610	ECEA1AU471	470
C17, 18	RCBS1H561KBY	560P	C47, 48	ECKD1H681KB	680P	C49, 50	ECEA1EU4R7	4.7	C611	ECEA1AU221	220
C19, 20	ECEA1HU010	1	C50	ECEA1CU470	0.018	C413, 414	ECQB1H103JZ	0.01	C612	ECKD2H682PE	0.0068
C21, 22	RCBS1H181KBY	180P	C51	ECQB1H183JZ	0.018	C415, 416	ECKD1H472JZ	0.0047	C613	ECKD1H223ZF	0.022
			C52	ECEA1CU470	0.018	C417, 418	ECEA1CU100	10			
C23, 24	ECEA1HU010	1	C53	ECEA1CU470	0.018	C419, 420	ECQV1H473JZ	0.047	C701, 702	ECEA1HU2R2	2.2
C25, 26	ECQB1H102JZ	0.001	C54	ECKD1H392KB	0.0039	C421, 422	ECQV1H224JZ	0.22	C703	ECKD1H22	

■ REPLACEMENT PARTS LIST

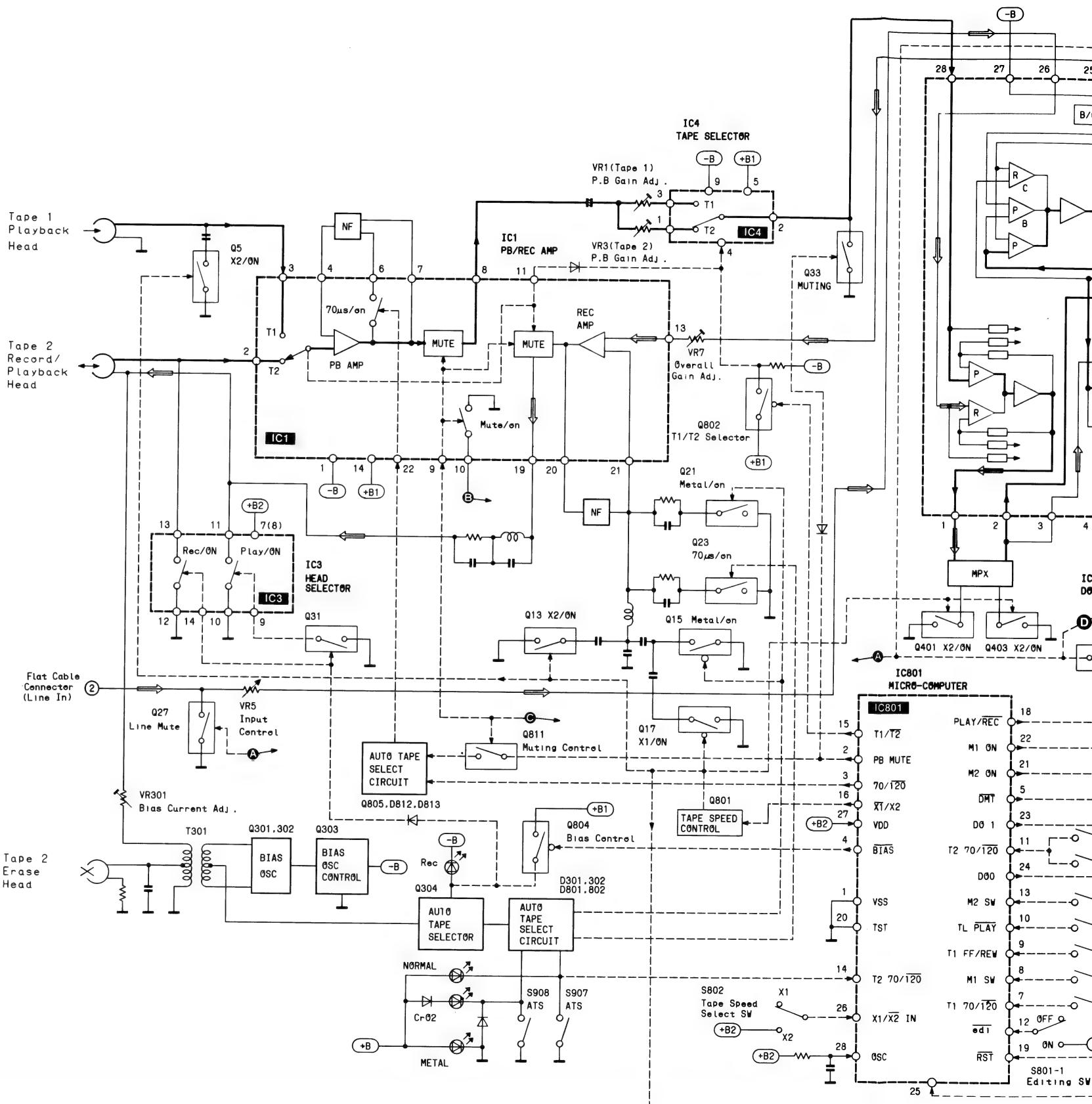
Notes: • Part numbers are indicated on most mechanical parts.
Please use this part number for parts order.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
INTEGRATED CIRCUITS					
IC1	AN7014K	Integrated Circuit	D602~607	1SR35200	Diode
IC3	UPC1290C	Integrated Circuit	D608	MA4062-M	Diode
IC4	MN6634	Integrated Circuit	D703~708	LN463YCPPU	L.E.D.
IC401, 402	TEA0665	Integrated Circuit	D709~714	LN863RCPP	L.E.D.
IC701	AN6888	Integrated Circuit	D805, 806	LN846RP	L.E.D.
IC801	MN1402STN	Integrated Circuit	D807	LN346GP	L.E.D.
			D808	LN446YP	L.E.D.
COILS					
L1, 2	SLQX303-1K	Choke	L3, 4	QLQX272D	Choke
L401, 402	QLM9Z10K	MPX Coil	L403, 404	ELM7Q306A	Skewing Network Coil
TRANSISTORS					
Q5, 6, 33, 34	2SD1450R	Transistor	Q7, 8, 29, 30	2SJ40D	Transistor
Q15~18, 806	2SA1309Q	Transistor	Q13, 14, 21~24,	2SC3311-Q	Transistor
Q27, 28	2SA1253-S	Transistor	Q31	UN4213	Transistor
Q31	2SB1030Q	Transistor	Q303	EVND4AA00B24	Tape 1/Tape 2 P.B. Gain Adj.
Q303	2SD592ANC-Q	Transistor	VR1~4	EWAPB1X05A54	Input Volume
Q304, 601, 807,	2SC3311-Q	Transistor	VR5, 6	EVND4AA00B14	Overall Gain Adj.
808	2SB621A-R	Transistor	VR7, 8	EVND4AA00B15	Bias Current Adj.
Q401~404	2SC3311-Q	Transistor	VR301, 302	EVND1AA00B14	Tape Speed Adj.
Q602	2SB621A-R	Transistor	Q603	2SD1423Q	Transistor
Q603	UN4113	Transistor	Q801~803, 805	UN4113	Transistor
Q804	UN4116	Transistor	Q809, 810	UN4114	Transistor
Q809, 810	UN4116	Transistor	Q901, 902	2SK381D	Transistor
COMBINATION PART					
Z801	EXBF7E562J	5.6kΩ×6	SWITCHES		
DIODES					
D5~10, 13, 301,	1SS254	Diode	S1, 2, 801, 802	SSH4101	NR Dubbing Switch
302, 801~804,			S601	SSH1069	Power Switch
809~814,			S901~906	SSP83	Leaf Switch
819~822			S907~909	LSA-1150AU	Leaf Switch
D601	MA4160M	Diode			

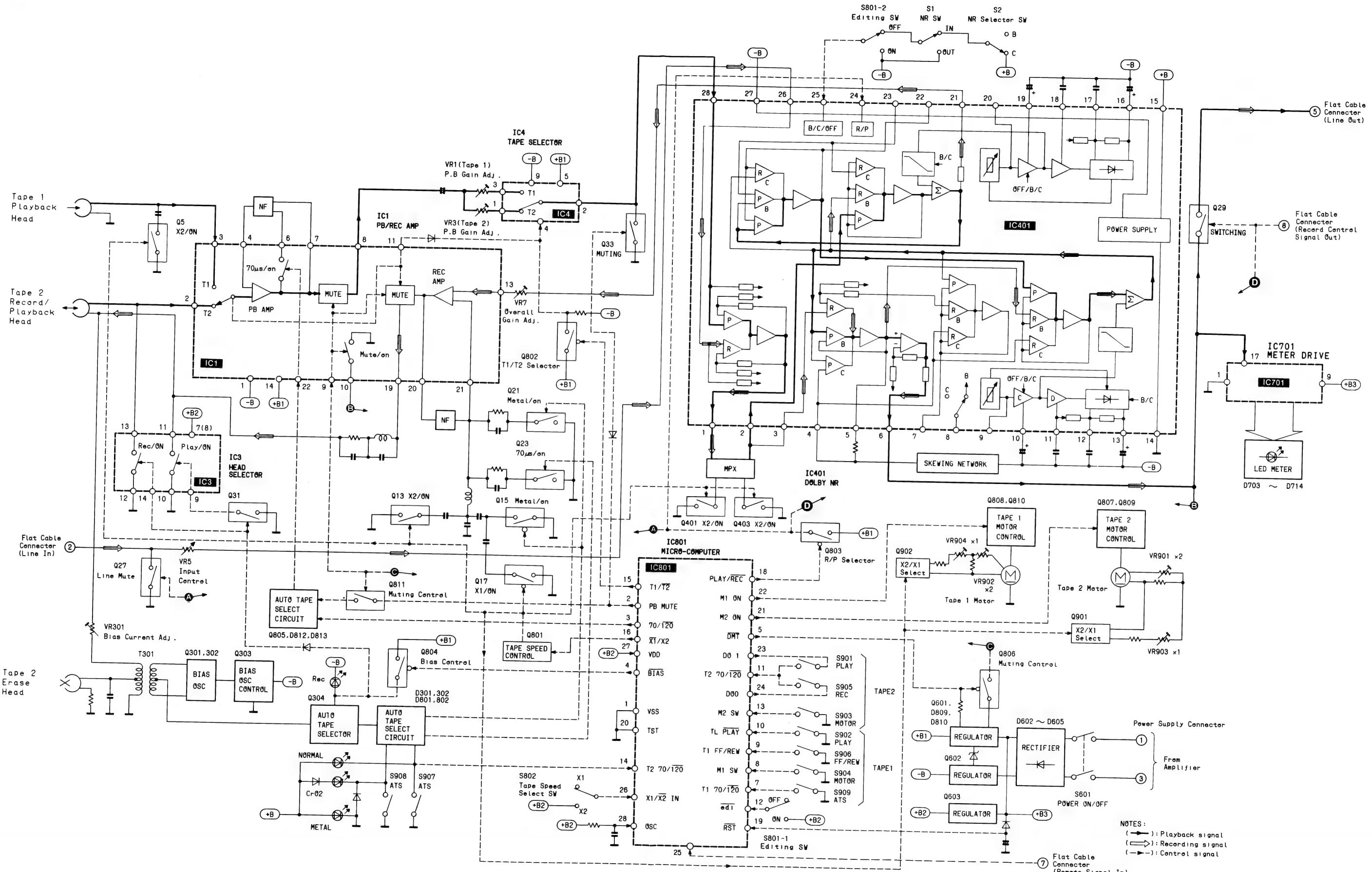
• Terminal Guide of Transistors, Diodes and IC's



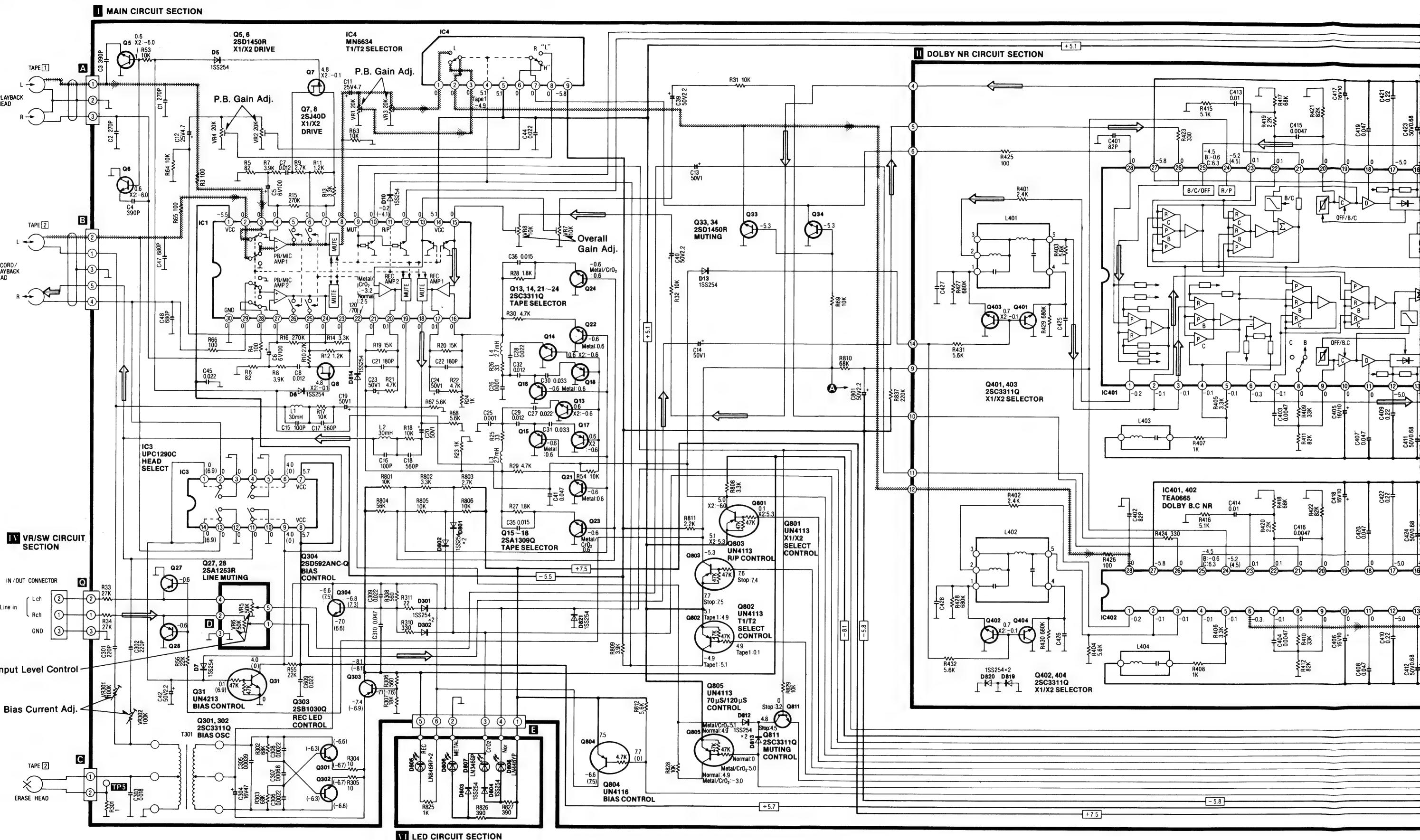
■ BLOCK DIAGRAM

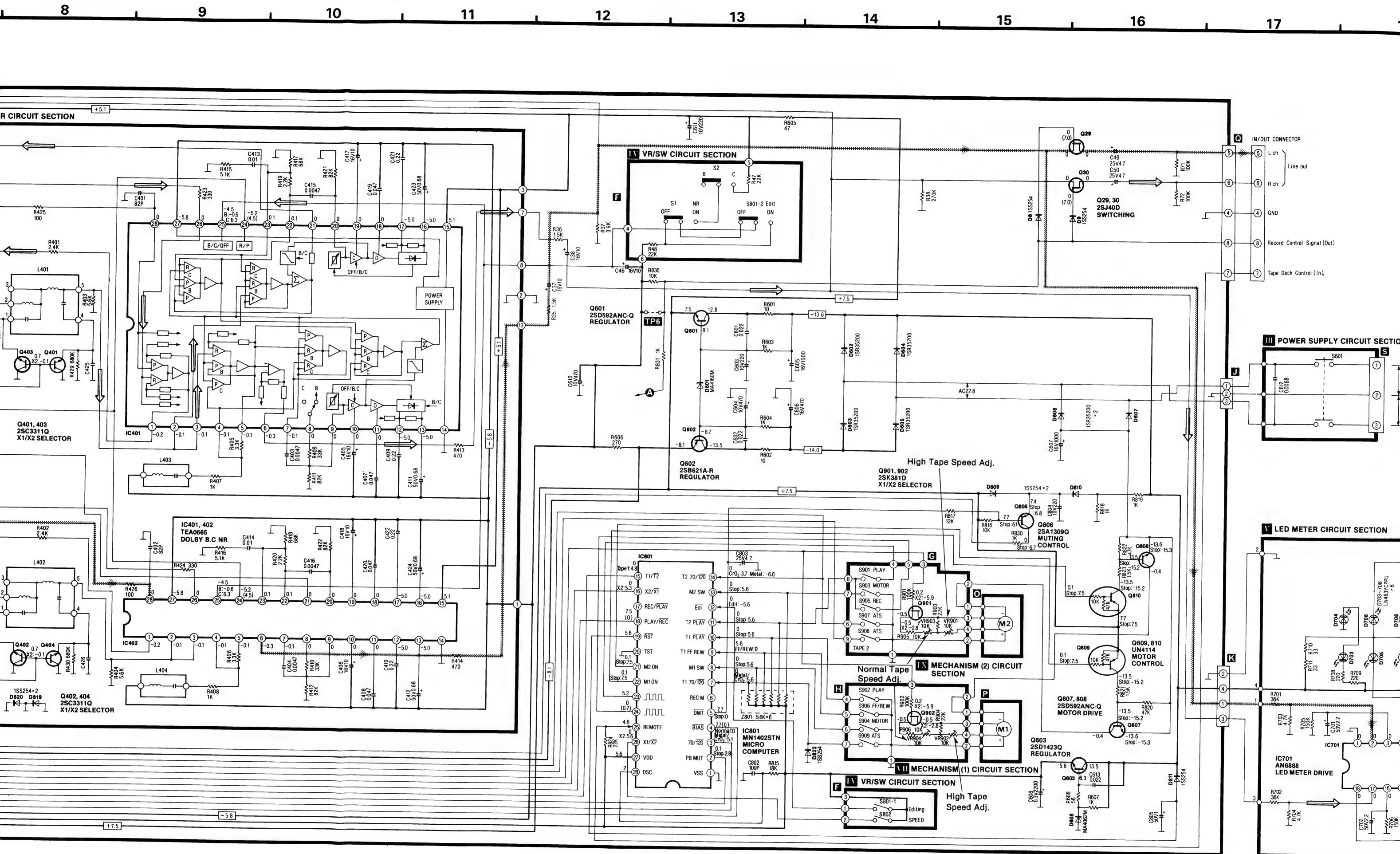


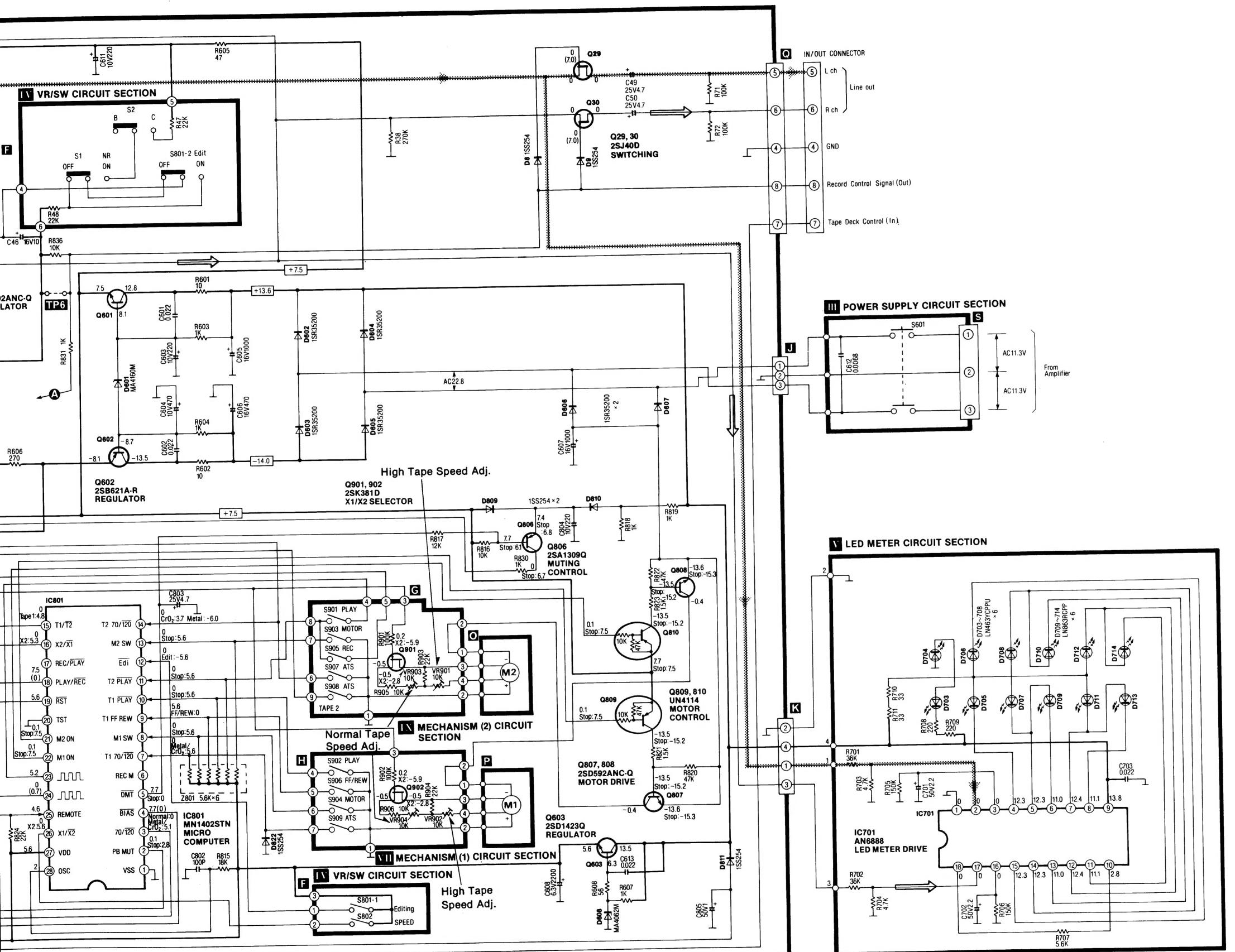
■ BLOCK DIAGRAM



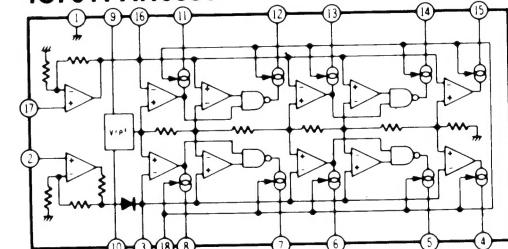
■ SCHEMATIC DIAGRAM (This schematic diagram may be modified at any time with the development of new technology)





**Notes:**

- S1 : Dolby NR switch in "out" position.
- S2 : Dolby NR switch in "B" position.
- S601 : Power switch in "off" position.
- S801 : Editing switch in "off" position.
- S802 : Editing tape speed select switch in "Normal" position.
- S901 : Tape 2 play switch in "off" position.
- S902 : Tape 1 play switch in "off" position.
- S903 : Tape 2 motor switch in "off" position.
- S904 : Tape 1 motor switch in "off" position.
- S905 : Tape 2 rec switch in "off" position.
- S906 : Tape 1 FF/REW switch in "off" position.
- S907 : Tape 2 Normal switch in "off" position.
- S908 : Tape 2 CrO₂ switch in "off" position.
- S909 : Tape 1 70μS switch in "off" position.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise. 1K = 1,000Ω, 1M = 1,000kΩ.
- Capacity are in micro-farads (μF) unless specified otherwise.
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
- () Voltage values at record mode.
- CrO₂ Voltage values at CrO₂ tape mode.
- Metal Voltage values at Metal tape mode.
- NR Voltage values at Dolby NR mode.
- edi Voltage values at editing mode.
- For measurement use EVM.
- (—) indicates B (bias).
- (---) indicates the flow of the playback signal.
- (→) indicates the flow of the record signal.

EQUIVALENT CIRCUIT
IC701: AN6888

Playback S/N ratio * Test tape ... QZZCFM	Greater than 45dB
Overall distortion * Test tape ... QZZCRA for Normal ... QZZCRX for CrO ₂ ... QZZCRZ for Metal	Normal..... Less than 3.5% CrO ₂ , Metal... Less than 4%
Overall S/N ratio * Test tape ... QZZCRA	Greater than 43dB (without NAB filter)

*** Caution !**

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
* Cover the parts boxes made of plastics with aluminum foil.
* Ground the soldering iron.
* Put a conductive mat on the work table.
* Do not touch the legs of IC or LSI with the fingers directly.

■ MECHANICAL PARTS LOCATION

NOTES

- When changing mechanism parts, apply the specified grease to the areas marked "X X" shown in the drawing "Mechanical Parts Location".

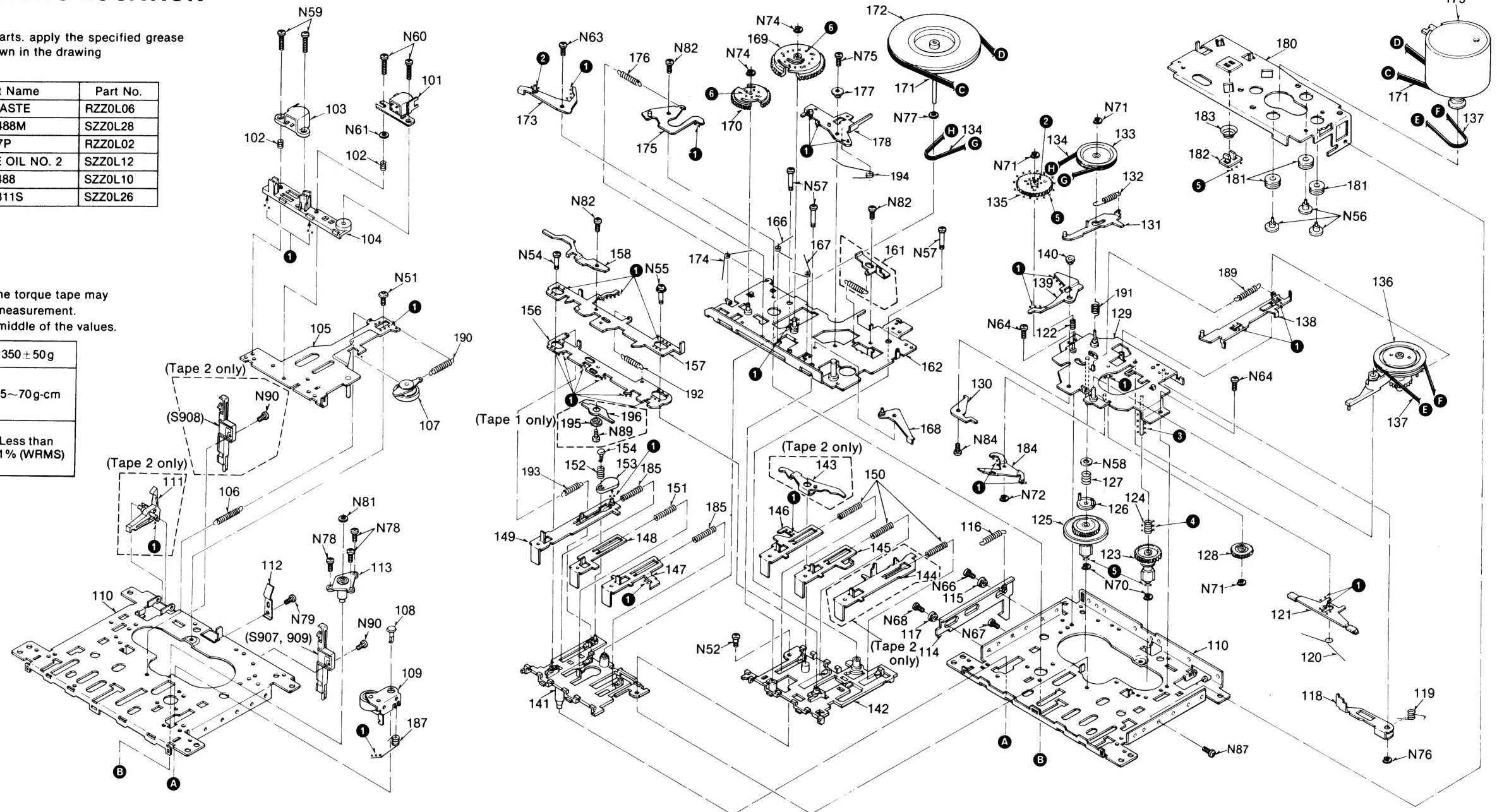
Mechanical Parts Location

Ref. No.	Part Name	Part No.
①	ROCOL PASTE	RZZ0L06
②	FLOIL G-488M	SZZ0L28
③	FLOIL 947P	RZZ0L02
④	SILICONE OIL NO. 2	SZZ0L12
⑤	FLOIL G-488	SZZ0L10
⑥	FLOIL G-311S	SZZ0L26

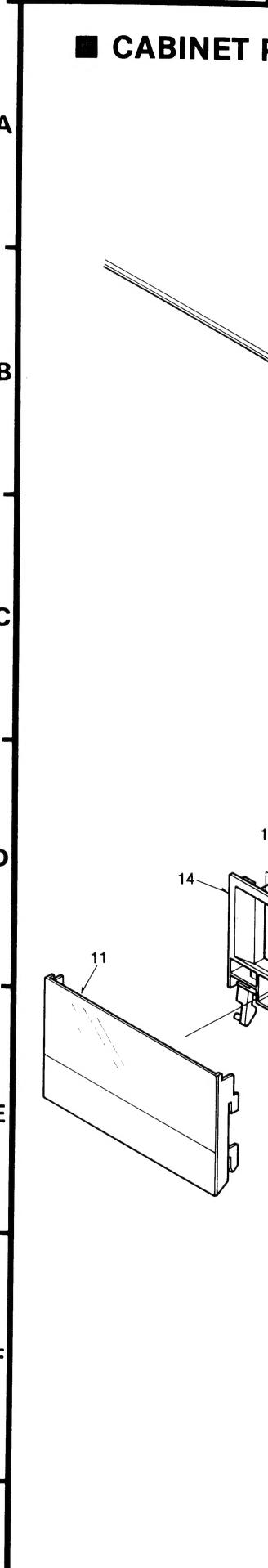
SPECIFICATIONS

NOTE: The value indicated by the torque tape may fluctuate during torque measurement.
In that case, obtain the middle of the values.

Pressure of pressure roller	$350 \pm 50\text{g}$
Takeup tension * Use cassette torque meter QZZSRKCT	$35 \sim 70\text{g}\cdot\text{cm}$
Wow and flutter; (JIS) * Use test tape QZZCWAT	Less than 0.1% (WRMS)

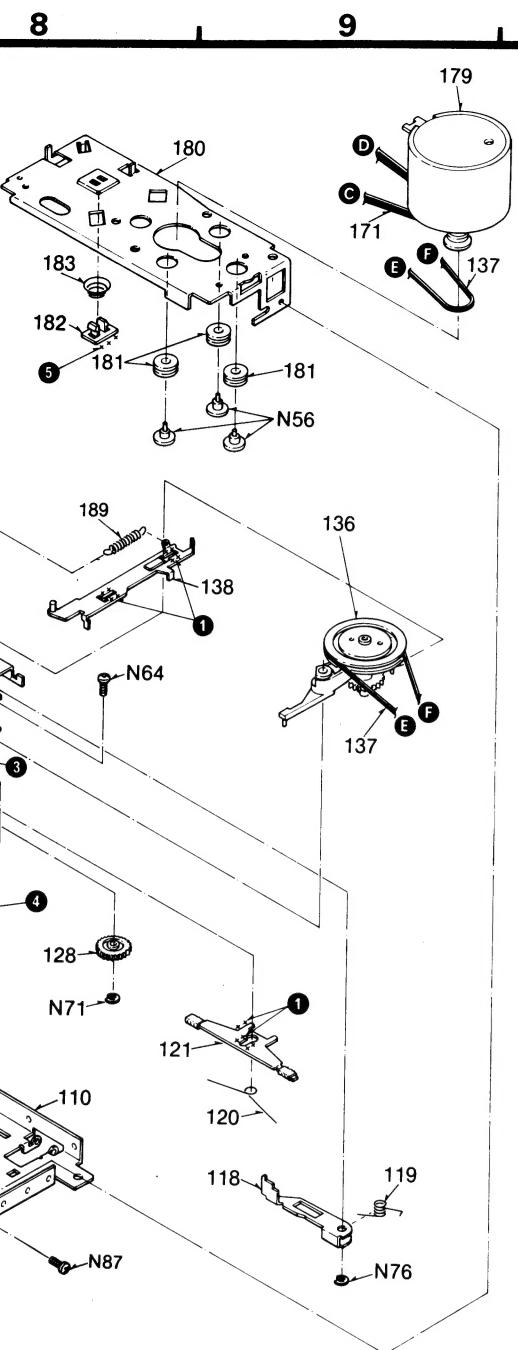


1



REPLACEMENT PARTS LIST

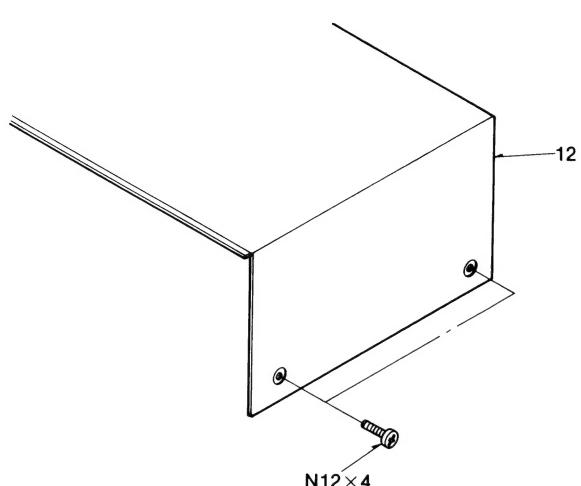
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MECHANISM PARTS			116	SMQT1629	E.H. Base Spring	(2)	140	SMQ4938	Auto Lever Collar	(2)	158	SMQ4872	E Kick Lever	(2)	185	SMQ4858	Button Lever Spring	(4)		
101	SJH95	R.P Head	(2)	117	SMQ4788	Collar	(2)	141	SMQ4836	Button Base (L)	(2)	161	SMQ4880	REC Function Lever	(2)	187	SMQT1453	Pinch Roller Spring	(2)	
102	SMQ4596	Head Spring	(4)	118	SMQ4790	Control Lever	(2)	142	SMQ4840	Button Base (R)	(2)	162	SMQT1590	Ass'y	(2)	189	RFS378Z	RF Slide Lever	(2)	
103	SJH97	Dummy Head,	(1)	119	RFS379Z	Control Lever Spring	(2)	143	SMQT1585	REC Stopper,	(1)	166	SMQ4888	Sub Chassis Ass'y	(2)	190	RFS249Z	Spring	(2)	
103	SJH96	Tape 1		120	SMQ4792	Spring	(2)	121	SMQ4794	Brake Arm Ass'y	(2)	167	SMQ4890	M. Trigger Arm	(2)	191	SMQT1631	RF Clutch Arm	(2)	
104	SMQ4768	E Head, Tape 2	(1)	122	SMQT1630	Cam Gear Spring	(2)	123	SMQ4800	Supply Reel Ass'y	(2)	144	SMQT1586	REC Button Lever,	(1)	168	SMQ4892	M. Trigger Arm Ass'y	(2)	
105	RFD135Z	Head Base	(2)	124	SMQT1636	Back Tension Spring	(2)	125	SMQ4804	Take Up Reel Ass'y	(2)	145	SMQ4846	Play Button Lever	(2)	169	SMQ4894	Main Gear	(2)	
106	SMQ4770	Head Panel Spring	(2)	126	SMQ4806	Sensing Piece	(2)	127	SMQ4808	Sensing Piece Spring	(2)	147	SMQ4850	FF Button Lever	(2)	170	SMQ4896	P Gear	(2)	
107	SMQ4772	Take Up Roller	(2)	128	SMQ4810	FF. Gear	(2)	129	SMQ4810	Shaft Ass'y	(2)	149	SMQ4854	Stop Button Lever	(2)	171	SMQT1591	Main Belt	(2)	
108	SMQ4774	Function Lever	(2)	130	RFU16Z	Reel Base Ass'y	(2)	131	SMQ4814	T. Roller Kick Lever	(2)	150	SMQ4856	Pause Button Lever	(2)	172	SMQT1592	Flywheel Ass'y	(2)	
109	SMQ4776-1	Stopper		132	SMQ4820	Sensing Lever	(2)	133	SMQ4818	Sensing Lever	(2)	151	SMQ4858	Button Lever Spring	(2)	173	SMQ4902	P. Trigger Arm Ass'y	(2)	
110	SMQT1458	Pinch Roller Arm	(2)	134	SMQ4822	Pully	(2)	135	SMQ4822	Full Auto Belt	(2)	152	SMQ4860	Button Lever Spring	(2)	174	SMQ4904	P. Trigger Arm	(2)	
111	SMQ4778	Ass'y		136	SMQ4824	Cam Gear	(2)	137	SMQ4826	Motor Ass'y	(2)	153	SMQ2444	Spring		175	SMQ4906	Pause Lever	(2)	
112	SMQ4780	Chassis	(2)	138	SMQ4826	Stopper	(2)	139	SMQ4826	SMQT1597	Stopper	(2)	154	SMQ4862	Pause Arm Ass'y	(2)	176	SMQ4909	Pause Arm Spring	(2)
113	SMQ4782	Tape 2 only		140	SMQ4828	Button Function	(1)	141	SMQ4828	Button Function	(1)	155	SMQT1597	Lift Arm Collar	(2)	177	SMQ4910	Lift Arm Ass'y	(2)	
114	RFY183Z	Pack Hold Spring	(2)	142	SMQ4830	Lever, Tape 1		143	SMQ4830	Motor Ass'y	(2)	156	SMQT1597	SMQT1593	(2)	178	SMQT1596	Motor Ass'y	(2)	
115	SMQ4786	Flywheel Metal	(2)	144	SMQ4832	Lever, Tape 2		145	SMQ4832	SMQT1633	(2)	157	SMQT1589	SMQT1633	(2)	179	SMQ4916	FM Hold Plate	(2)	
116	SMQ4788	RF Belt	(2)	146	SMQ4832	RF Belt	(2)	147	SMQ4832	Motor Rubber	(6)	158	SMQT1595	Motor Rubber	(6)	180	SMQ4918	Motor Rubber	(6)	
117	SMQ4790	RF Slide Lever,	(1)	148	SMQ4832	RF Slide Lever,	(1)	149	SMQ4832	N51	SMQT1581	Collar Screw	(2)	181	SMQ4922	SMQ4878	Collar Screw	(2)		
118	SMQ4792	Tape 1		150	SMQ4832	Switch Function	(2)	151	SMQ4832	N52	SMQ4838	Collar Screw	(2)	182	SMQT1595	SMQ4870	Collar Screw	(2)		
119	SMQ4794	Auto Lever	(2)	152	SMQ4832	Lever		153	SMQ4834	N53	SMQ4912	SMQ4912	(1)	183	SMQ4922	SMQ4912	SMQ4912	(1)		
120	SMQ4796	Auto Lever	(2)	154	SMQ4834	SMQT1589		155	SMQ4834	N54	SMQ4914	SMQ4914	(1)	184	SMQ4940	SMQ4914	SMQ4914	(1)		
121	SMQ4798	Auto Lever	(2)	156	SMQ4834	SMQT1589		157	SMQ4834	N55	SMQ4916	SMQ4916	(1)	185	SMQ4940	SMQ4916	SMQ4916	(1)		
122	SMQ4800	Auto Lever	(2)	158	SMQ4834	SMQT1589		159	SMQ4834	N56	SMQ4918	SMQ4918	(1)	186	SMQ4940	SMQ4918	SMQ4918	(1)		
123	SMQ4802	Auto Lever	(2)	160	SMQ4834	SMQT1589		161	SMQ4834	N57	SMQ4920	SMQ4920	(1)	187	SMQ4940	SMQ4920	SMQ4920	(1)		
124	SMQ4804	Auto Lever	(2)	162	SMQ4834	SMQT1589		163	SMQ4834	N58	SMQ4922	SMQ4922	(1)	188	SMQ4940	SMQ4922	SMQ4922	(1)		
125	SMQ4806	Auto Lever	(2)	164	SMQ4834	SMQT1589		165	SMQ4834	N59	SMQ4924	SMQ4924	(1)	189	SMQ4940	SMQ4924	SMQ4924	(1)		
126	SMQ4808	Auto Lever	(2)	166	SMQ4834	SMQT1589		167	SMQ4834	N60	SMQ4926	SMQ4926	(1)	190	SMQ4940	SMQ4926	SMQ4926	(1)		
127	SMQ4810	Auto Lever	(2)	168	SMQ4834	SMQT1589		169	SMQ4834	N61	XWG2	XWG2	(1)	191	SMQ4940	XWG2	XWG2	(1)		
128	SMQ4812	Auto Lever	(2)	170	SMQ4834	SMQT1589		171	SMQ4834	N62	SMQT1582	SMQT1582	(1)	192	SMQ4940	SMQT1582	SMQT1582	(1)		
129	SMQ4814	Auto Lever	(2)	172	SMQ4834	SMQT1589		173	SMQ4834	N63	XYN2+C4	XYN2+C4	(1)	193	SMQ4940	XYN2+C4	XYN2+C4	(1)		
130	SMQ4816	Auto Lever	(2)	174	SMQ4834	SMQT1589		175	SMQ4834	N64	XYN2+C5	XYN2+C5	(1)	194	SMQ4940	XYN2+C5	XYN2+C5	(1)		
131	SMQ4818	Auto Lever	(2)	176	SMQ4834	SMQT1589		177	SMQ4834	N65	XYN2+C6	XYN2+C6	(1)	195	SMQ4940	XYN2+C6	XYN2+C6	(1)		
132	SMQ4820	Auto Lever	(2)	178	SMQ4834	SMQT1589		179	SMQ4834	N66	XSN2+6	XSN2+6	(1)	196	SMQ4940	XSN2+6	XSN2+6	(1)		
133	SMQ4822	Auto Lever	(2)	180	SMQ4834	SMQT1589		181	SMQ4834	N67	XSN2+7	XSN2+7	(1)	197	SMQ4940	XSN2+7	XSN2+7	(1)		
134	SMQ4824	Auto Lever	(2)	182	SMQ4834	SMQT1589		183	SMQ4834	N68	XSN2+8	XSN2+8	(1)	198	SMQ4940	XSN2+8	XSN2+8	(1)		
135	SMQ4826	Auto Lever	(2)	184	SMQ4834	SMQT1589		185	SMQ4834	N69	XSN2+9	XSN2+9	(1)	199	SMQ4940	XSN2+9	XSN2+9	(1)		
136	SMQ4828	Auto Lever	(2)	186	SMQ4834	SMQT1589		186	SMQ4834	N70	XFE133Z	XFE133Z	(1)	200	SMQ4940	XFE133Z	XFE133Z	(1)		
137	SMQ4830	Auto Lever	(2)	188	SMQ4834	SMQT1589		187	SMQ4834	N71	XUC12FT	XUC12FT	(1)	201	SMQ4940	XUC12FT	XUC12FT	(1)		
138	SMQ4832	Auto Lever	(2)	190	SMQ4834	SMQT1589		188	SMQ4834	N72	XUC2FT	XUC2FT	(1)	202	SMQ4940	XUC2FT	XUC2FT	(1)		
139	SMQ4834	Auto Lever	(2)	192	SMQ4834	SMQT1589		189	SMQ4834	N73	XYN26+C6	XYN26+C6	(1)	203	SMQ4940	XYN26+C6	XYN26+C6	(1)		



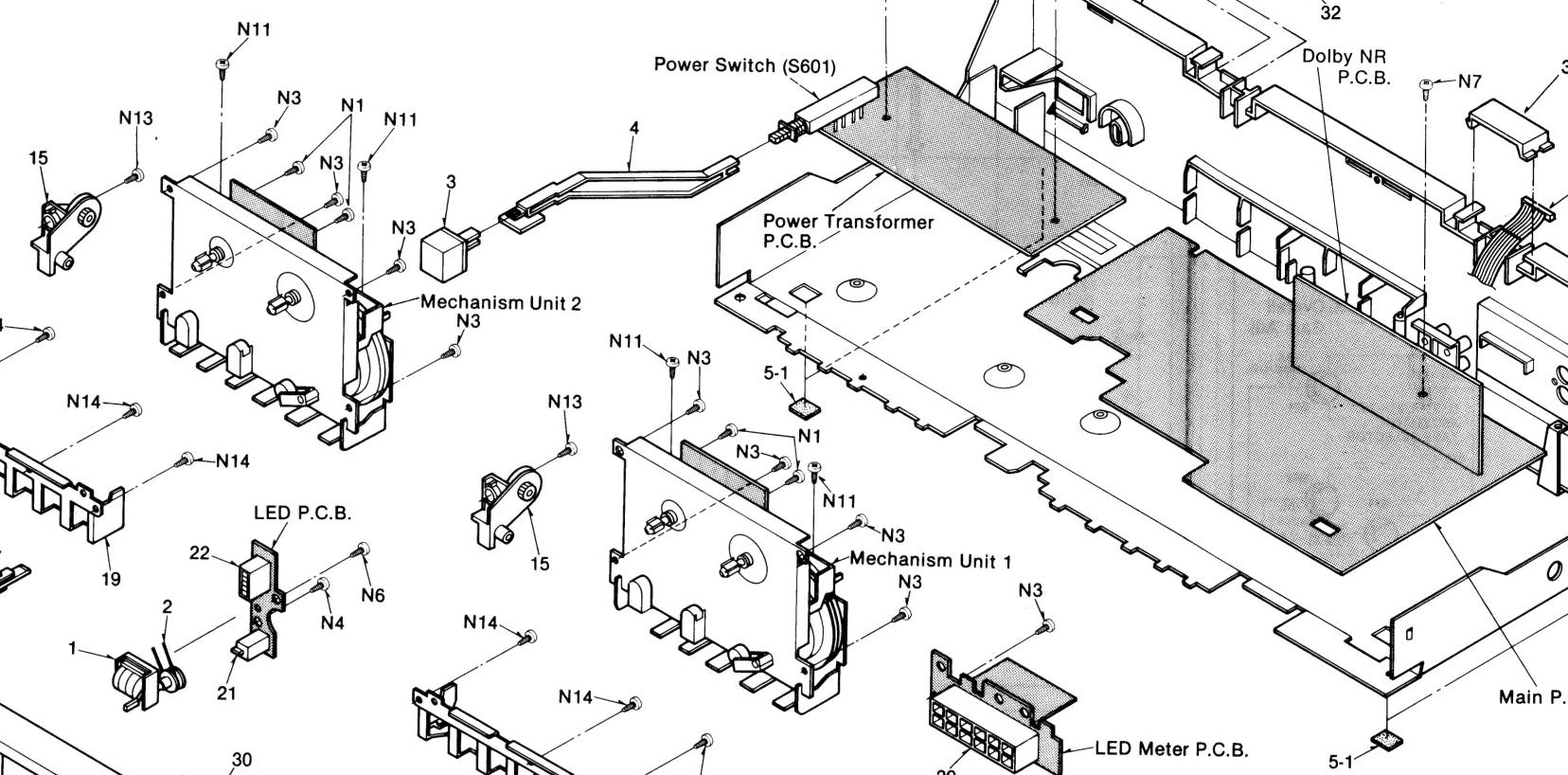
Ref. No.	Part No.	Part Name & Description	Quantity
N63 (2)	SMQT1582	Collar Screw	(2)
N64 (2)	XYN2+C4	Screw, $\oplus 2 \times 4$	(4)
N66 (2)	XYN2+C5	Screw, $\oplus 2 \times 5$	(2)
N67 (2)	XYN2+C5	Screw, $\oplus 2 \times 5$	(2)
N68 (2)	XSN2+6	Screw, $\oplus 2 \times 6$	(2)
N70 (2)	RFE133Z	E-Ring 1.5φ Special	(4)
N71 (2)	SMQ4930	Polyslider Washer	(6)
N72 (2)	XUC12FT	E-Ring 1.2φ	(2)
N74 (2)	XUC2FT	E-Ring 2.0φ	(4)
N75 (2)	XYN26+C6	Screw, $\oplus 2.6 \times 6$	(2)
N76 (1)	XUC15FT	E-Ring 1.5φ	(2)
N77 (1)	SMQ4932	Polyslider Washer	(2)
N78 (2)	SMQ4934	Screw, $\oplus 2 \times 3$	(6)
N79 (2)	XTN26+3	Screw, $\oplus 2.6 \times 3$	(2)
N81 (2)	SMQ4936	Nylon Washer $2 \times 5 \times 0.5$	(2)
N82 (2)	SMQT1582	Collar Screw	(6)
N84 (2)	SMQ4944	Collar Screw	(1)
N87 (2)	XYN2+C5	Screw, $\oplus 2 \times 5$	(4)
N89 (2)	XSS2+25	Screw, Tape 1 only	(1)
N90 (2)	XYN2+C6	Screw	(6)

CABINET PARTS LOCATION

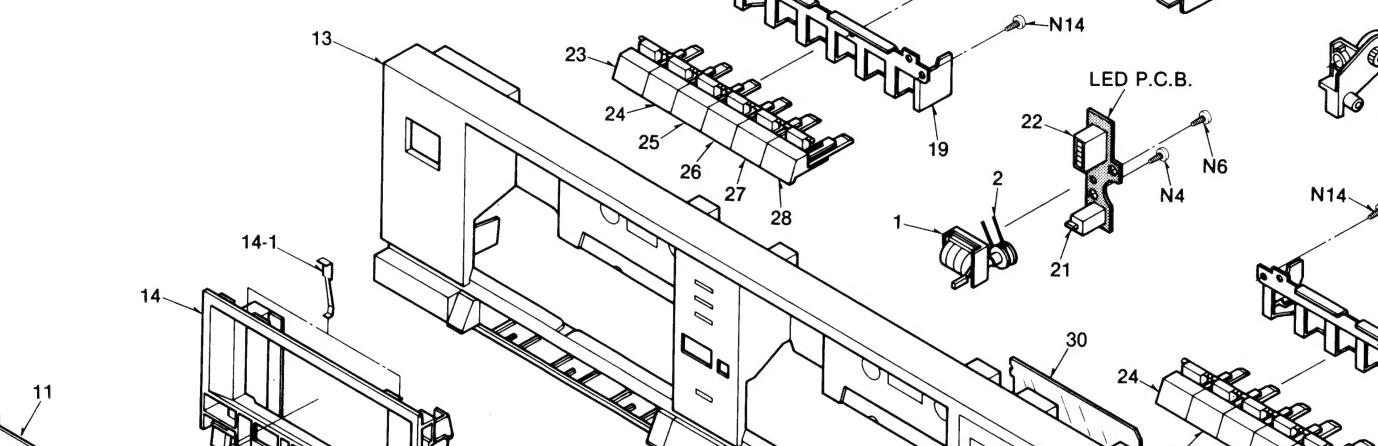
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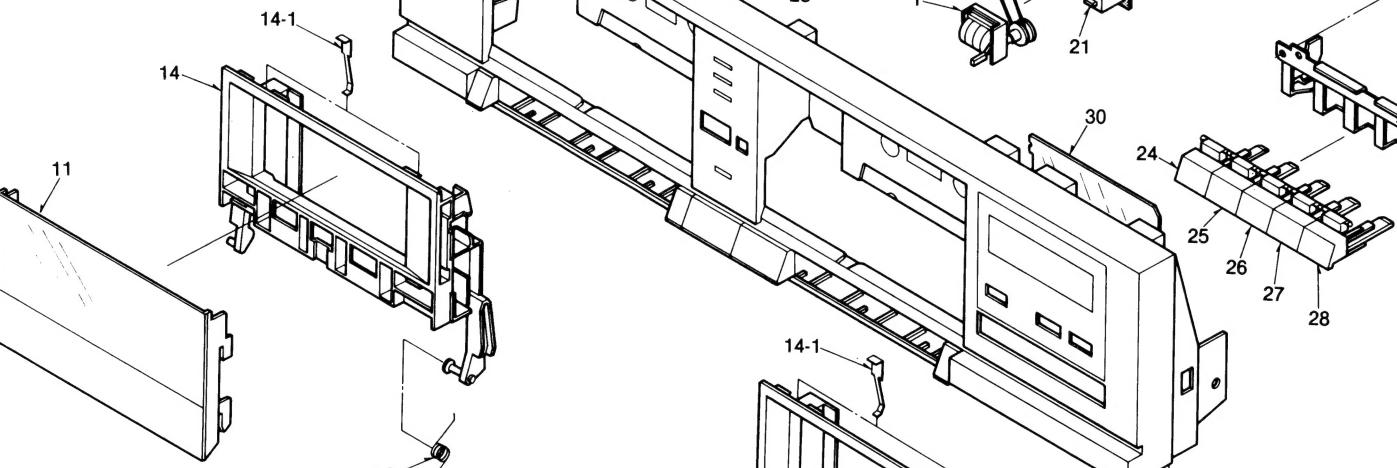
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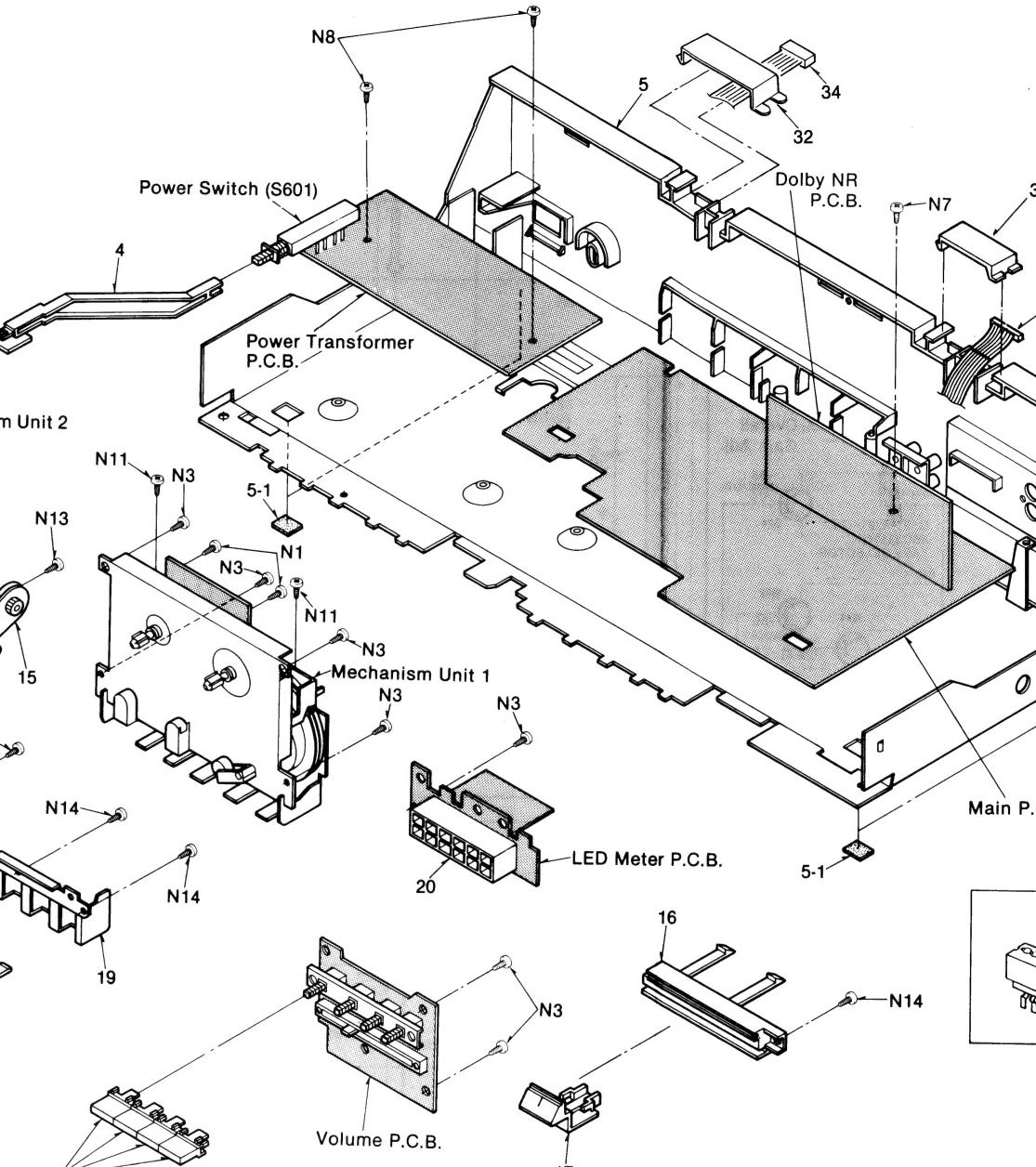
C



D



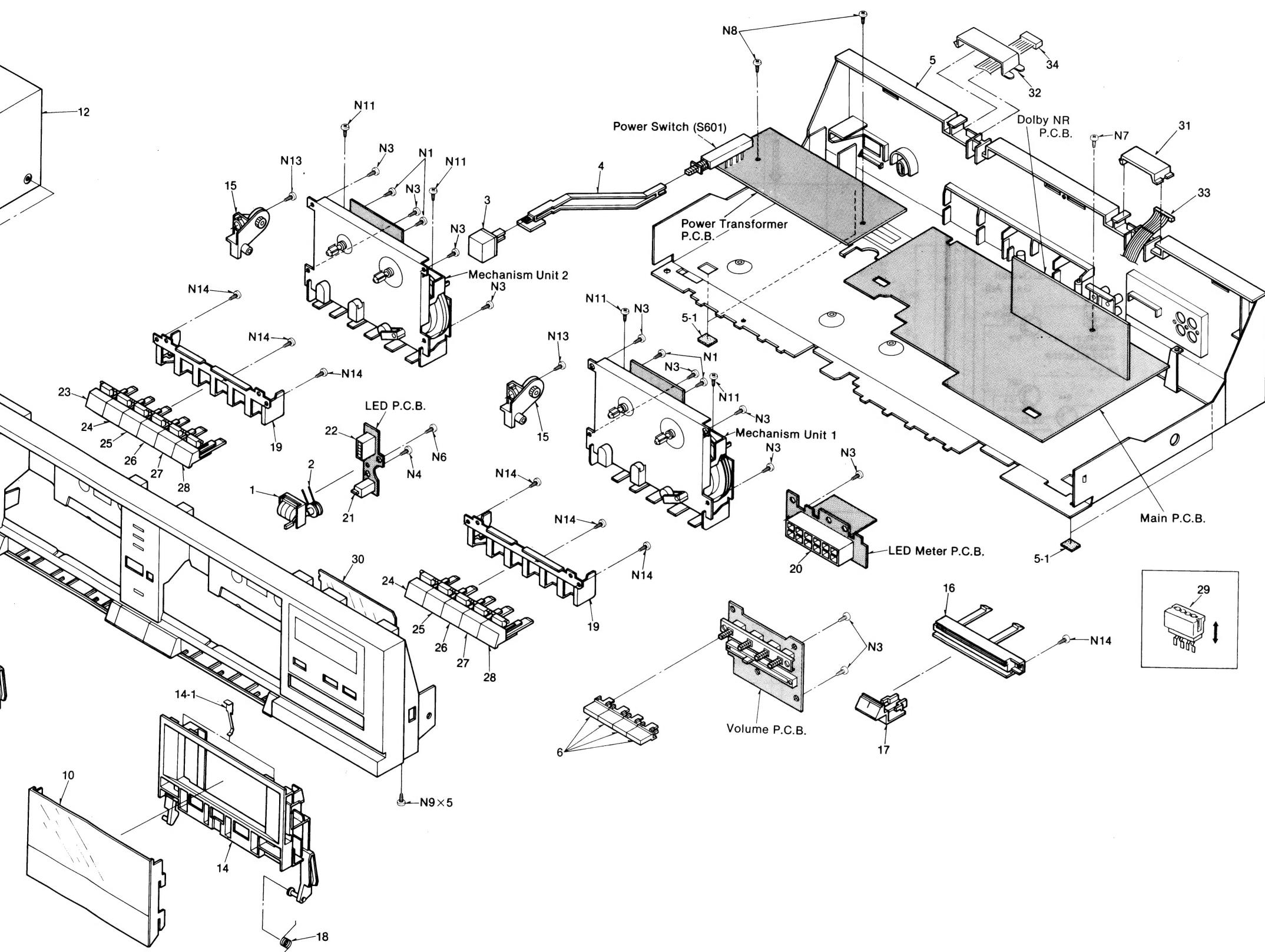
E



F

3 4 5 6 7 8 9 10 11 12

ATION



Notes:

- Part numbers are indicated on most mechanical parts.
Please use this part number for parts order.
- The parenthesized numbers in the column of description stand for the quantity per set.

Ref. No.	Part No.	Description
CABINET and CHASSIS PARTS		
1	SJN20	Tape Counter (1)
2	SMQ20018	Tape Counter Belt (1)
3	SBC866-3	Power Button (1)
4	SUB255	Connection Rod (1)
5	SKMST25-KP	Main Case Ass'y (1)
(5-1)	(SKL293	Foot (4)
6	SBC800	Button (4)
10	SGE1790	Cassette Lid, Tape 1 (1)
11	SGE1791	Cassette Lid, Tape 2 (1)
12	SKA11740K99	Cabinet (1)
13	SGYST25-KP	Front Panel Ass'y (1)
14	SGXSD225W-KM	Cassette Holder Ass'y (2)
(14-1)	QBP2006A	Tape pressure Spring (4)
15	SGXST25-KP	Damper Gear Ass'y (2)
16	SGXST10-KE	Slide Guide Ass'y (1)
17	SBD131	Knob, Volume (1)
18	SUS797-1	Holder Spring (2)
19	SMN2001	Bracket (2)
20	LN121307P-1	L.E.D. Ass'y (1)
21	LN018304P	L.E.D. Ass'y (D805) (1)
22	LN031306P	L.E.D. Ass'y (D806~808) (1)
23	SBC866	Button, Rec, Tape 2 only (1)
24	SBC867	Button, PLAY (2)
25	SBC868	Button, REW (2)
26	SBC869	Button, FF (2)
27	SBC870	Button, STOP (2)
28	SBC871	Button, PAUSE (2)
29	SJT30443-V	Socket, J [K] (1)
29	SJT30543-V	Socket, J [D] (1)
29	SJT30643-V	Socket, J [E, F] (2)
29	SJT30743-V	Socket, J [H] (1)
29	SJT30943-V	Socket, J [G] (1)
30	SGX7847	Filter (1)
31	SGX7835	Cover (1)
32	SGX7836	Cover (1)
33	SWKST25-KP	Cord (1)
34	SWKST25-KP1	Cord (1)
SCREWS		
N1	XTV3+8F	Tapping, $\oplus 3 \times 8$ (4)
N3	XTV3+10JFR	Tapping, $\oplus 3 \times 10$ (11)
N4	XTV26+8JFRR	Tapping, $\oplus 2.6 \times 8$ (1)
N6	XTV26+6J	Tapping, $\oplus 2.6 \times 6$ (1)
N7	XTB3+8JFZ1	Tapping, $\oplus 3 \times 8$ (1)
N8	XTW3+12QFR	Tapping, $\oplus 3 \times 12$ (2)
N9	XTB3+8J	Tapping, $\oplus 3 \times 8$ (5)
N11	XTB3+6FFR	Tapping, $\oplus 3 \times 6$ (4)
N12	SNE2125-1	Cabinet (4)
N13	XTV3+12J	Tapping, $\oplus 3 \times 12$ (2)
N14	XTV26+8J	Tapping, $\oplus 2.6 \times 8$ (7)
ACCESSORY		
A1	SQF12801	Instruction Book (1)
PACKING PARTS		
P1	SPG5745	Carton Box (1)
P2	SPS4705	Pad, Left Side (1)
P3	SPS4706	Pad, Right Side (1)
P4	SPS4753	Pad, Center (1)
P5	XZB50X65A02	Polyethylene Bag (1)
P6	SPS4734	Pad (1)